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A Course of Lectures

ON

URINE, URINARY DEPOSITS, AND CALCULI.

DELIVERED AT THE PATHOLOGICAL LABORATORY, DURING THE SESSION 1857-58.

BY

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LECTURE IX.

URINE IN DISEASE. 2. OF LIGHT AND FLOCCULENT DEPOSITS. *Mucus. Vibriones. Torulæ, including the Sugar-Fungus and Penicillum Glaucum. Sarcinæ. Trichomonas Vaginæ. Epithelium of the Genito-urinary Passages, Ureter, Bladder, Urethra, Vagina. Spermatozoa. Vegetable Bodies resembling Spermatozoa. Benzoic Acid. Casts of the Renal Tubes.* A. *Casts of Medium Diameter, about the one-seven-hundredth of an inch. Epithelial Casts. Casts containing Dumb Bells. Granular Epithelial Casts. Casts containing Oil. Fat-Cells. Casts containing Blood. Casts containing Pus.* B. *Casts of considerable Diameter, about the one-five-hundredth of an inch. Large Waxy Casts.* C. *Casts of Small Diameter, about the one-thousandth of an inch. Small Waxy Casts. Of Casts in a clinical point of view.*

GENTLEMEN,—We have already considered the characters of the three classes of urinary deposits, and we will now proceed to examine the different substances comprised in the first class, which includes light and flocculent deposits. Many of them occupy a considerable bulk, although the actual quantity of matter entering into the formation of the deposit is exceedingly small. If dried, one of the most bulky of these deposits from six or eight ounces of urine would hardly weigh half a grain.

II.—FIRST CLASS OF URINARY DEPOSITS.

Mucus. If healthy urine be allowed to stand for a few hours after it has been passed, a bulky, flocculent, and very transparent cloud will be deposited towards the lower part. Upon examining this in the microscope, we see a few delicately granular cells, rather larger than a blood-corpuscle, scattered sparingly through a clear and perfectly transparent substance, in which only a few minute granular points can be detected. A few cells of epithelium from the bladder, or from some other part of the urinary mucous membrane, are not unfrequently met with. Nothing more is observed in the mucus found in healthy urine. In disease, however, this mucus increases in quantity, and forms a thick transparent deposit, containing numerous cells similar to those above referred to, with much epithelium, the character of which depends upon the particular part of the mucous membrane affected. The characters of mucus are represented in Fig. 24. Little collections of mucus, with imperfectly formed cells, are not unfrequently met with in urine. These are generally derived from the follicle of the urethra, or from the prostate. Long shreds of mucus-like material are sometimes formed in the seminal tubules, and escape with the urine. (*Illustrations*, Pl. xiii, Fig. 2.)

Fig. 24.—Mucus and small granular cells from healthy urine. The large cell is from the bladder. X 215.

The very thick glairy deposit, which is frequently found in the urine in cases of disease of the bladder, must not be mistaken for mucus. This consists of pus altered by the action of carbonate of ammonia which has been set free in consequence of the decomposition of the urea by the action of some animal matter acting upon it as a ferment, after it has left the bladder, In some cases, this change even commences in the bladder itself; and the expulsion of the viscid substance often gives rise to serious inconvenience. When we attempt to draw off the urine with a catheter, the instrument becomes completely plugged up. Urine of this kind exhibits a highly alkaline reaction, evolves an ammoniacal odour, and frequently contains a considerable deposit of crystals of the triple or ammoniaco-magnesian phosphate, with granules of phosphate of lime. I have observed in several cases, that when the pus came from an abscess in the kidney, or from the pelvis of the kidney, it was not accompanied with crystals of triple phosphate. When it is derived from the bladder, earthy salts are generally present. This point should be taken into consideration before arriving at a diagnosis in doubtful cases. Liquor ammoniæ and potash exert an action upon pus similar to that of carbonate of ammonia.

It should, however, be borne in mind that, if basic phosphate of soda be added to urine, ammonia is always set free in considerable quantity. Dr. G. O. Rees suggests that the ammonia is often set free in this manner, and not by the decomposition of the urea. The same observer (Lettsomian Lectures, *Med. Gaz.*, 1851) considers that the alkalinity of the urine is dependent in certain cases upon the secretion of a large quantity of an alkaline fluid from the mucous membrane of the bladder. When the mucous membrane is exposed, it is always found to be moistened by an alkaline fluid. When irritated, a quantity more than sufficient to neutralise the acidity of the urine is poured out. Dr. Rees explains the fact, that the acid reaction of urine not unfrequently becomes more intense after giving alkalies, by supposing that the alkali allays the irritable state of the mucous membrane, which in consequence secretes less of the alkaline fluid. In injuries to the spine, the beneficial action of alkalies is explained by supposing that the mucous membrane requires a greater quantity of alkali to protect it than in health. Still it is difficult to associate this explanation with the fact that healthy urine is *always* acid. If a slight excess of this *natural* acid really endangered the integrity of the mucous membrane, by exciting the secretion of excess of a *destructive* alkaline substance, one is almost forced to the false conclusion that the actual condition which exists is not so advantageous to the individual as the existence of a mucous membrane adapted to bear without change the constant action of an acid fluid would be.

Dr. G. O. Rees, as is well known, has also shown that in many cases the urine is actually secreted alkaline; indeed, he was the first observer who showed "that the degree of the acidity of the urine may to a certain extent be regarded as a measure of the acidity of the stomach".

The mucus which is deposited from many specimens of urine often contains a great number of octohedral crystals of oxalate of lime, frequently so very minute as to appear, under a power of two hundred diameters, like a number of dark square shaped spots. Their crystalline form may be demonstrated by the use of a very high power; but they may be recognised with certainty with a little practice, as their square shape presents a characteristic appearance, with which the eye soon becomes familiar. They are insoluble in a solution of potash, and also in strong acetic acid. These crystals are commonly not deposited until after the urine has left the bladder; and if it be allowed to stand for a longer period, they frequently undergo a great increase in size. Fragments of hair, small portions of cotton fibre, and other substances of accidental presence, are not unfrequently encrusted with them.

Vibriones. After urine containing a little epithelium or other animal matter has been allowed to stand for some time, numerous elongated bodies, varying much in length and possessing active movements, are developed in it. These

little bodies appear as simple lines under a magnifying power of two hundred diameters; but, by careful focussing, under one of five hundred or six hundred diameters, the longest of them are seen to consist of filaments with numerous transverse lines, indicating a similarity of structure with some of the lower vegetables. They sometimes very closely resemble one of the algæ ordinarily found in the mouth. Most observers agree as to the vegetable nature of the bodies in question; but Dr. Hassall has recently arrived at the conclusion that they are animal, and that the movements are voluntary (*Lancet*, Nov. 19th, 1859). That the movements are not merely molecular, is quite certain; but it seems to me that much stronger evidence of the animal nature of the vibriones is required than is afforded by the character of their movements, before we are justified in regarding them as animals. As investigation proceeds, the conclusion that many forms, which were considered animal, are really of a vegetable nature, is more frequently forced upon us than that organisms hitherto held to be vegetable, must really be regarded as animal. There is little to be gained by attempts to draw an arbitrary line between the lowest classes of the animal and vegetable kingdom.

These vegetable organisms are seen as minute lines under the microscope; and they undergo very active movements, the longer ones twisting about in a serpentine manner. They are sometimes developed in urine before it has left the bladder, and always occur in decomposing urine.

Other organisms are frequently met with in urine. Numerous forms of animalcules, one of which Dr. Hassall includes in the genus *bodo* (*bodo urinarius*), are also observed in various specimens of urine. It is probable that many of these forms merely indicate different stages of existence of one species.

Torulæ, including the Sugar-Fungus and Penicillum Glaucum. Certain forms of vegetable fungi or torulæ are developed in urine after it has been standing for some time. The period which elapses before the appearance of the fungi, and the particular species which is developed, vary much in different specimens of urine, and in different cases of disease. In diabetes, torulæ are often developed in quantity very soon (within a few hours) after the urine has been passed; and their growth at this early period leads the observer to suspect the presence of sugar, which must be confirmed by the application of chemical tests. (Lecture v.) Different forms of fungi are represented in the *Illustrations*, Pl. xix, Figs. 1 to 7; Pl. xxi, Fig. 6; Pl. xxiii, Figs. 2, 3, 4, 5.

Dr. Hassall has communicated a most interesting paper upon the development of torulæ in the urine, to the Royal Medical and Chirurgical Society, which will be found in the volume of *Transactions* for 1853. Dr. Hassall arrives at the conclusion that there is a species of fungus which is developed in specimens of urine, containing even very minute traces of sugar, which may be looked upon as characteristic of the presence of this substance, as it occurs in no other condition of the urine. This is the sugar fungus; but most observers are agreed that the characters of the fungus are by no means sufficiently constant to enable us to conclude as to the presence or absence of sugar in the urine. The sugar fungus in diabetic urine is identical with the yeast plant.

Besides the sugar fungus, however, there is another species which is very commonly met with in acid urine containing albumen, if exposed to the air. This is the *Penicillum glaucum*, the same fungus which is developed in the lactic acid fermentation. This species is represented in the *Illustrations*, Pl. xix, Figs. 1, 4, 5.

The microscopical characters of the fungi in different specimens of urine vary considerably; but, as Dr. Hassall has stated, these differences depend not upon the existence of several distinct species of plants, but rather upon the stage of development which the fungus has reached. Thus, in some specimens of urine, the growth of the fungus is arrested at the sporule stage; in another, not until a thallus is formed; and in a third, it goes on until aerial fructification takes place, and new spores are developed. The degree of acidity of the urine, and the length of time during which it has been exposed to the air, appear to determine, in great measure, the stage of development which the fungus attains. Dutrochet long ago stated that an acid reaction and albumen are necessary for the development of penicillum; but Dr. Hassall, in some more extended experiments, proved that the fungus often appeared in acid urine which contained no albumen; and I have frequently observed the same point myself.

The penicillum glaucum, as well as the sugar fungus, may be met with in saccharine urine, because all the necessary conditions for its development may be present, namely, exposure to air, an acid liquid, and a certain quantity of nitrogenous matter. Mr. Hoffman of Margate showed that the spores of penicillum would, under favourable circumstances, give rise to the development of the sugar fungus.

From a careful consideration of this question, then, I think we may conclude that, although well defined differences may be made out at certain periods of growth of these fungi, penicillum glaucum and torula cerevisiæ, it must be conceded that there are also forms which could not be distinguished from one another. The large circular sporules of the sugar fungus are distinct enough from those of pencillum glaucum; but oval and circular sporules, which cannot easily be distinguished, are to be obtained under certain circumstances from each plant.

Sarcinæ are little vegetable organisms resembling little cubes, which are from time to time met with in peculiar cases of obstinate vomiting. They have been observed, however, in other fluids, and occasionally occur in the urine; but the specimens which have fallen under my notice in the urine were smaller than those which I have usually observed in vomit.

Sarcinæ have been met with in the urine by Heller, Dr. Mackay, Dr. Johnson, and by myself, under circumstances which leave no doubt that this vegetable organism is sometimes developed in urine. I once analysed a specimen of urine containing sarcinæ, which was sent me by my friend Mr. Brown of Lichfield. It was acid; specific gravity, 1018.6.

Analysis 59.

Water	952.8
Solid Matter	47.2
Organic Matter	37.9
Fixed Salts	9.3

The specimen was carefully examined for lactic acid, but not a trace could be detected.

Trichomonas Vaginæ. Donné some years ago described, under the name of trichomonas vaginæ, an organism which he considered to be of an animal nature. It consists of a rounded cell, with vibratile filaments projecting from it, and was found in the urine of females suffering from leucorrhœa. Kölliker and Scanzoni have confirmed Donné's observations, and have detected the trichomonas in the vaginal mucus both of impregnated and of unimpregnated women. I have never been fortunate enough to meet with a specimen of this organism.

Epithelium of the Genito-urinary Passages. The epithelium from the kidney has been already described. It is figured in the *Illustrations*, Pl. xxiv, Figs. 1, 2, 3, 4. The cells from the *ureter* are of the columnar form, and some are spindle-shaped. (*Illustrations*, Plate xxiv, Fig. 5.) In form, and indeed in their general appearance, these cells much resemble those found in scirrhous tumour. Care must be taken not to make the mistake in cases of suspected cancer of the kidney.

The epithelium of the *bladder* varies much in different parts of the organ. In the fundus, there is much columnar epithelium mixed with large oval cells; whereas, in that part termed the trigone, large and slightly flattened cells, with a very distinct nucleus and nucleolus, are most abundant. Columnar epithelium appears to line the mucous follicles, while the scaly lies on the surface of the mucous membrane between them. Various forms of bladder-epithelium are represented in Fig. 25.

Fig. 25.—Epithelium from the bladder. Many of the large cells lie upon the summit of the columnar and caudate cells, and depressions are seen on their under surface. One is seen in the centre of the figure.

The epithelial cells of the *urethra* are, for the most part, of

the columnar form; but mixed with this there is also a good deal of scaly epithelium. Towards the orifice, the epithelium is almost entirely of the scaly variety.

The large cells of scaly epithelium, so commonly met with in the urine of females, and derived from the *vagina*, are represented in Fig. 26. They vary, however, much in size and form, and are sometimes very irregular in shape, with uneven ragged edges.

Fig. 26.—Vaginal epithelium from urine.

Spermatozoa. The urine should be examined for spermatozoa as soon as possible after it has been passed, as they very rapidly become destroyed. They may be distinguished with a power of about two hundred diameters; but, unless the eye is familiar with them, it is better to employ one of from four hundred to five hundred.

Spermatozoa often form, with the mucus from the seminal tubules, whitish flocculi, which are suspended in the urine. They may sink to the bottom, forming a deposit invisible to the unaided eye.

Fig. 27.—Spermatozoa from urine. × 215.

You will sometimes be called upon to examine stains upon linen, or the vaginal mucus, in cases of suspected rape. Such an investigation must be undertaken with the greatest care; and you must not express a positive opinion if you have the slightest doubt as to the nature of the bodies in question; neither should you draw a conclusion from the presence of one body like a spermatozoon, nor from supposed fragments of their bodies. Fragments of cotton or linen sometimes assume forms very like those of spermatozoa. The mucus in which they are suspected to be present may be remoistened with distilled water, without the forms being destroyed. For cases in which spermatozoa were detected, see *Archives of Medicine*, vol. i, pp. 48, 139; *Illustrations*, Pl. xxi, Fig. 2.

Spermatozoa are not uncommonly found in the urine in health. It is only when their appearance is constant, and accompanied with other more important symptoms, that the practitioner is justified in interfering. Let me impress upon you the importance of exercising the greatest caution in these cases; for the mere allusion to the condition may do more harm to the patient's mind than can be counterbalanced by the good produced by medical treatment. The occasional presence of spermatozoa in urine must not be looked upon, in itself, as evidence of that condition to which the name of *spermatorrhœa* has been applied—a term which I am sorry to employ at all, and which, I think, ought to be abolished altogether.

Vegetable Bodies resembling Spermatozoa. The only structure occurring in urine, or of renal origin, at all liable to be mistaken for spermatozoa, as far as I am aware, are a form of vegetable growth which I have only once met with, in a specimen of urine kindly sent to me by my friend Mr. Masters of Peckham Rye. Mr. C. Roberts of St. George's Hospital has

Fig. 28.—Bodies very closely resembling spermatozoa, but probably of a vegetable nature. The one marked *a* especially resembles a spermatozoon.

taken very careful notes of the case. Some of the bodies in question very closely resembled spermatozoa; but their true nature was ascertained by noticing the characters of many other specimens of the vegetable growth. (Fig. 28.) An account of this case is given in the *Archives of Medicine*, vol. i, p. 251.

[*To be continued.*]

Addresses and Papers

READ AT THE

TWENTY-SEVENTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

[*Held in LIVERPOOL, JULY 27th, 28th, and 29th, 1859.*]

RETROVERSION OF THE GRAVID UTERUS.

By Thomas Skinner, M.D., Physician to the Northern Dispensary, Liverpool.

[*Read in abstract, 29th July, 1859.*]

II.—Retroversio Uteri post Conceptionem.

[*Continued from page 819.*]

(*c*) *Dimensions and Form of the Pelvis favouring the Displacement.* As regards the dimensions and form of the pelvis favouring retroversion of the gravid uterus, the facts are scanty; but there are sufficient to show that the accident happens in most of the ordinary varieties. In two cases of my own, besides the cases I have cited of retroversio uteri *ante* conceptionem, the pelves were perfectly natural. In Professor Godefroy's case (*Gazette Médicale de Paris*, 24th January, 1857), and in that of Mr. Greaves of Manchester (Journal, 1859, p. 269), the pelves were of the *æquabiliter justo major* type. In four of Dr. Ramsbotham's cases, in one of Dr. Wm. Hunter's, and in one of Dr. Carmichael's, there was slight contraction of the conjugate diameter. Lastly, among the many cases of retroversion of the non-gravid uterus which I have examined, I have never found one which gave me the slightest cause to believe that the conformation of the pelvis had anything to do with the origin of the displacement. No one supposes that any peculiar form of the pelvis gives rise to anteversion or flexion of the unimpregnated uterus; wherefore, then, should the shape of the pelvis give origin to retroversion?

So far as the limited number of facts go, I think we are justified in concluding, that the accident may happen quite irrespective of the form of the pelvis; that a capacious one will admit of the displacement at a later date than where it is of a smaller type; and that a contracted brim indirectly favours

the accident, by offering an obstacle to the ascent of the uterus or to its spontaneous or artificial reduction.

(*d*) *Number of the Pregnancy most prone to Retroversion.* Although this point can only be settled by statistics, I regret exceedingly that upon this, as well as upon other points of still greater importance, the data I have to offer are so very deficient. This arises from the extremely variable and loose manner in which the majority of the cases have been recorded. The following table, however, is instructive.

TABLE VII.

In 25 cases, the number of the pregnancy is not stated.

9,	the retroversion occurred in ..... Multiparæ.
9,	ditto ..... Primiparæ.
7,	ditto ..... 2nd pregnancy.
4,	ditto ..... 3rd ditto.
1,	ditto ..... 4th ditto.
2,	ditto ..... 5th ditto.
2,	ditto ..... 6th ditto.
1,	ditto ..... 7th ditto.
1,	ditto ..... 9th ditto.
2,	ditto ..... 10th ditto.
63	

This table leads to the belief that retroversion of the gravid uterus is much more liable to accompany the first, second, and third pregnancies, than subsequent ones; and that primiparous females are most of all the subjects of the displacement. This being the case, is it not probable that some of these primiparous cases have been of the class of retroversio uteri *ante* conceptionem?

(*e*) *Period of Gestation most liable to the Displacement.* This point is not so easily ascertainable, in consequence of the difficulty of determining the time when the uterus became retroverted in many of the recorded cases. The following table, however, may afford some light:—

TABLE VIII.

Of the 48 cases which recovered, the period of gestation, when the retroversion occurred or when the displacement was detected, is as follows:—

Cases.	Period of gestation.	Cases.	Period of gestation.
4	Not stated.	1	8½ months.
2	2½ months.	3	9 months.
5	3 months.	1	14 months.
12	3½ months.	1	23 months.
8	4 months.	1	2 yrs. and more.
2	4½ months.	1	3½ years.
2	4½ months.	—	
3	6 months.	48	
2	8 months.	—	

From the above table, it will be seen that in twenty-five, or more than one-half of the cases, the retroversion occurred or was detected between the third and the fourth months of gestation; and that in twelve, or one quarter of them, the displacement took place or was first recognised at three and a half months. We may safely conclude that the period of gestation, when the act of retroversion is most likely to happen, is between the third and the fourth months.

(*f*) *The most Dangerous Period.* In order to determine the most dangerous period, I would draw attention to the following:—

TABLE X.

Of 17* fatal cases, the periods of gestation were—

1	2 months.	4	4 months.
1	3 months.	1	4 ms. or more.
1	3½ months.	2	4½ months.
1	3¾ ms. or more.	5	5 months.
1	occurred.. 3½ months. / detected .. 7 months.	—	
		17	

Here we have indubitable evidence that from the fourth to the fifth month is the most dangerous period for retroversion of the gravid uterus; twelve, or more than two-thirds of the fatal cases having occurred, or having been detected for the first time, between the fourth and the fifth months of pregnancy.

(*g*) *The more immediate Causes of Death in the Fatal Cases.* The causes of death in the fatal cases may be divided into—(1) Ruptures of the urinary and other passages; (2) Inflammation and its consequences; and (3) Exhaustion. Inflammation of the bladder and peritoneum is undoubtedly the most common cause of death, as will be obvious on glancing at the following

TABLE XI.

Causes of death in the fatal cases:—

I.	*Ruptures.*	
	Of urethra, with inflammation of mucous coat of bladder	1
	Of the bladder from gangrene	1
	Of the bladder	1
	Of the peritoneum and posterior wall of vagina	1
II.	*Inflammations.*	
	Peritonitis and its consequences	4
	Inflammation of uterus and bladder	1
	Uterine phlebitis	1
	Inflammation of bladder, with ulceration, etc.	1
III.	*Exhaustion*, etc.	
	Diarrhœa and exhaustion three days subsequent to abortion	1
	Sank undelivered at the tenth month (old adhesions to rectum and sacrum)	1
	Exhaustion	2
	"Died in great agony"	1
	Fever with exhaustion	1
	Fatal cases ..	17

(*h*) *Can Retroversion occur in the Later Months of Pregnancy?* There seems to be quite as much difference of opinion on this point as upon any other connected with the subject of retroversion of the gravid uterus. We have abundant evidence that women have been delivered at the sixth, eighth, and ninth months, and some have even gone beyond this period with the uterus retroverted; but it is not so easy to say when the displacement first occurred in these cases. Boivin and Dugès state, that "after the fifth month there is scarcely any fear of a return of the retroversion." (*Practical Treatise*, p. 84.) I am quite of the same opinion.

Let us examine the cases where the uterus was found to be retroverted in the later months of pregnancy. In one of Dr. Merriman's cases delivered at the full term, the displacement was thought to have happened at the fifth month, on account of the patient receiving news of the death of a friend. Now, the fifth month is without exception the most improbable time for the accident to happen, as the uterus is then spherical in form, and is larger in diameter than the brim of the normal pelvis. (In Mr. Wall's case, which was rather before the fifth month, the diameter of the uterus every way was six inches or more.) Moreover, grief or a mere fright is inadequate to cause the displacement at any time; nor could they occasion it in the present instance by disturbing the function of the bladder, as in this case of Dr. Merriman's there never existed any retention of urine, nor could the lady "recollect having ever retained it long enough to occasion any considerable inconvenience." (Merriman's *Dissertation*, p. 28.) In Dr. Merriman's other case at the full term, no history is given, so that it is impossible to say when the uterus first became retroverted. In Mr. Stone's case at the full term (*Lancet*, 1854, vol i, p. 138), there is also no previous history given. In the case of Dr. De Billi of Milan, at eight months and a half (*Edinburgh Monthly Journal*, April 1845), no cause was traceable; and, as the "constipation and dysuria were very annoying during the whole period," I conclude that it was most likely a case of retroversio uteri *ante* conceptionem. In Dr. Ramsbotham's case at the eighth month (*Medical Times*, October 1852), no cause is specified, unless it was some dysuria at the fourth month; so that it is more than probable that the retroversion first occurred in the early months. In Mr. Baynham's case at the sixth month (*Edinburgh Medical Journal*, 1830, p. 256), the uterus had been six weeks retroverted before *paracentesis uteri per rectum* was performed, which saved the life of the patient; therefore the displacement could not have happened later than four months and a half. In Dr. Seddon's case at the sixth month (*Provincial Medical Journal*, 1848, p. 205), there was no cause traceable during gestation; and, as the uterus was irreducible both before and after parturition, old standing adhesions may have existed; so that it is highly probable the case was one of retroversio uteri *ante* conceptionem. The only remaining case is that of Mr. Greaves of Manchester (JOURNAL, 1859, p. 269); the patient

* As I have recovered two of the fatal cases I had missed, I include them in the present and future remarks.

was delivered at the sixth month, but the uterus most likely had become retroverted about four months and a half, as the patient had suffered from retention of urine, with symptoms of peritonitis, six weeks previously.

The above are all the cases which I have been able to find on record where the uterus was known to be retroverted during the later months of pregnancy, and in none of them is there a single fact to warrant the belief that the displacement occurred subsequent to the four and a half or fifth month.

On this subject, the late Dr. William Campbell of Edinburgh has made the following pertinent remarks:—"As this change of position (retroversion) can only happen while the uterus is in the pelvis, it may be asked, How long is it likely to continue in this situation? This will depend upon the capacity of the pelvis, the proportion of liquor amnii, and the size of the fœtus. Where the fœtus is large, or the pelvis small, the uterus will slip out of this cavity earlier than if the pelvis were capacious, and the fœtus merely of the ordinary volume. It is a very general observation in practice, that some females quicken when they are only three months and a half pregnant, while others are not sensible of the motions of the fœtus until towards the close of the fifth month—a proof that the residence of the gravid uterus *in pelve* is not of the same duration in every female. In the capacity of the pelvis, the greatest variety may be observed. I have seen one where, after the removal of its linings, the lateral (transverse) diameter was six inches and three quarters in length. The wife of a soldier belonging to the 5th Dragoon Guards applied to me in the early part of October 1825, when within three days of having completed her fifth month of pregnancy. Her pelvis was so large as to permit the uterus to the size of a Florentine flask to be protruded *extra vulvam;* it occasioned no inconvenience in voiding the urine or fæces; and she could return it *ad libitum*, by the mere application of the hand. In such cases, it would require a degree of logical reasoning of more than ordinary cogency to convince us that the uterus could not be retroverted at a much later period than the fourth month." (*Journal of Medical Science*, vol. ii, p. 337.)

There is a great amount of truth in these most excellent remarks of Dr. Campbell; but such cases as these he alludes to form great exceptions to the rule. Smellie had a similarly exceptional case of *prolapsus uteri* at the end of the fourth month, "which seemed to fill up the whole pelvis". (Smellie's *Midwifery*, third edition, vol. ii, p. 124.) Nor am I ignorant of those anomalous cases where the capacity of the pelvis has been of such excessive magnitude, that the uterus, at an advanced period of gestation, and in the absence of labour, "*has made its entire escape out of it, so as to have presented itself bodily between the thighs of the patient.*" (Davis's *Obstetric Medicine*, 4to, vol. i, p. 23, 1836.) Such cases as these belong more properly to the curiosities of medical literature; and, let me add, that, as the capaciousness of the pelvis is no reason why the uterus and its contents should not be of bulk in proportion, and as there are no cases on record of retroversion of the gravid uterus in such pelves, I am inclined, for the present, to question Dr. Campbell's conclusion, that the displacement can occur "at a *much later* period than the fourth month".

[Since this paper was read, it has occurred to me that, as there is generally observed in an average of natural labours at the full term, a *closely fitting* proportion between the relative size of the fœtal head and the pelvic brim; *a priori*, there ought also to be a corresponding adjustment of the same parts to each other, where the pelvis is enlarged in all its dimensions. That these relative proportions obtained in Dr. Uvedale West's case (Journal, 1860, p. 233), where he extracted with the long forceps a fœtus weighing fourteen pounds avoirdupois, without injuring the perineum, I make no doubt. That they did exist in Dr. Meadow's exceedingly interesting case, where he delivered a woman of a living fœtus at the full term, of the enormous weight of eighteen pounds, three ounces (*Medical Times and Gazette*, 1860, vol. ii, p. 105), is certain, for the following reasons:—The fœtus was "perfectly formed and beautifully developed," the placenta was of "proportional" size, and weighed three pounds, whilst the *post mortem* measurements of the length of the body was thirty-two inches, and the circumference of the head no less than seventeen inches and a quarter; as a matter of course, the pelvic dimensions must have been enlarged in proportion. The average length of a full grown fœtus is from eighteen to twenty-four inches, and the circumference of an average pelvic brim is from thirteen to fourteen inches and a half. The above remarks apply with greater force to the still more extraordinary case of Mr. Davies of Pershore, who delivered a female of a fœtus which weighed at birth nineteen pounds two ounces, *both mother and child being still alive.—Op. cit.*, 1860, p. 249.]

Having already shown that there is no case on record which furnishes us with a single fact to justify the belief that the displacement has ever occurred in the later months of gestation, I shall now state a few facts which I think go a far way to show the improbability, if not the impossibility, of the accident happening at the fifth month or beyond it. In Dr. Mayor's case (Moreau, *Traité Pratique*, vol. i, p. 217), which died from laceration of the peritoneum and posterior wall of the vagina, when only three months and a half pregnant, the *post mortem* examination revealed the following important observation and measurements:—"The uterus was *pyramidal* in shape, *six inches in length*, and *five in breadth*." Five inches in breadth, or in diameter, is half an inch greater than the longitudinal or occipito-frontal diameter of a full grown fœtal head, the diameter which usually presents at the pelvic brim. Five inches in diameter corresponds to a circumference of about sixteen inches, which is more than the circumference of an average brim, the circumference of an average brim being from thirteen to fourteen inches and a half. (Churchill's *Midwifery*, 2nd ed., p. 13.) It is also greater than the circumference of an average full grown fœtal head, which is only fourteen inches. (Ramsbotham's *Obstetric Medicine*, 3d ed., 1851, p. 15.)

If these measurements of the pelvic brim, of the gravid uterus at *three months and a half*, and of the full grown fœtal head, are correct, do they not militate against the possibility of retroversion occurring in a normal pelvis after the fourth or fifth month? In Mr. Wall's case at the *fifth month*, the diameter of the uterus was rather above six inches. This will give us a circumference of about nineteen inches, which is nearly five inches more than the circumference of an average normal brim; thus accounting for the utter impossibility there existed of raising the uterus out of the pelvis even after death, and when the abdomen was opened, until the symphysis pubis was divided and held asunder. In Mr. Baynham's fatal case, also at the *fifth month* (*Edin. Med. Journ.*, 1830, p. 266), after death, on dividing the fœtal membranes, although nearly two pints of liquor amnii escaped, yet the head and chest and upper extremities of the fœtus were still *very tightly* retained in the pelvis; while a considerable part of the organ was situated above the brim, containing the breech and lower extremities. In Mr. Baker Brown's fatal case at the same period of gestation, the uterus was found, as in Mr. Wall's case, moulded to the form, and wedged into the cavity, of the pelvis.

I conclude from these facts, and from the negative evidence which I have adduced, afforded by those cases where the retroversion was recognised for the first time in the later months of pregnancy, that the occurrence of the act of retroversion of the gravid uterus is highly improbable, if not impossible, after four months and a half of gestation. From the same data, I also conclude that the displacement can only happen when the uterus is strictly speaking a pelvic organ. That the act of retroversion might happen at any time while the uterus is a pelvic organ, I do not deny; but the cases must be very few and far between where pelvic gestation is deferred beyond the fifth month, and the uterus not already retroverted. After the uterus has become an abdominal organ, its measurements, its peculiar form, the incompressible nature of its contents, and the relative dimensions of the pelvic brim, forbid the idea of the displacement occurring at or beyond the fifth month, *in pelve*.

[*To be continued.*]

The Medical Profession in Nice and Savoy. By an imperial decree dated October 24th, the university schools of theology, law, medicine, and pharmacy, at Chambery, Nice, Annecy, and other towns in the provinces recently annexed to the French empire, are suppressed. The professors and functionaries of these schools, who have received state pay, are at liberty to claim retiring pensions. The diploma of doctor of medicine, obtained before January 1st, 1861, in the Sardinian universities, by natives of the annexed provinces, is declared to be equivalent, without additional fee, to a French diploma, and to confer on the holders the corresponding rights and privileges. Similar privileges are granted to *pharmaciens*. Students, natives of Nice and Savoy, who hold government bursaries in the Royal Charles Albert College at Turin, are authorised to continue the enjoyment of their privilege until the termination of their studies.

Illustrations
OF
HOSPITAL PRACTICE:
METROPOLITAN AND PROVINCIAL.

BIRMINGHAM GENERAL HOSPITAL.

ILLUSTRATIONS OF DISEASE PRODUCED BY MENTAL INFLUENCE.

Under the care of James Russell, M.D.

[*Concluded from page* 853.]

The following is a case of hysteric anæsthesia, combined with paralysis.

Case ix. M. B., aged 58, widow. One of her children was drowned twenty years ago; she was dreadfully frightened, and "did not know what she was doing". Nine days afterwards, she miscarried. During the following fourteen years, she was very nervous and ailing; she then lost another child, and fell into hysteric fits, for the first time in her life. Two years afterwards, a son was near being drowned; she then "became almost mad". She has been in a nervous state ever since, with tendency to hysteric fits. She has also suffered from hemiplegia, so as to be obliged to use crutches; and for the last ten months she has been losing sensation. The insensibility began first in her right hand, suddenly; then attacked the left, and passed up the arm; the feet, and subsequently the legs, were afterwards similarly affected; her tongue has also participated in the disorder. Sensation in all parts is blunted and indistinct; she drops and breaks things, from not feeling when she is holding them. At the same time, muscular power became impaired in her legs, and she now has difficulty in walking. Her manner of walking is deliberate and hesitating, rather than paralytic; her feet are raised slowly, and are speedily set down. The muscles of her arms have never been affected. Her eyesight is dim. She has "bad thoughts", loses memory of recent events (no doubt, from want of attention). Her nights are disturbed; she sees all manner of frightful objects. Her general health is impaired. Menstruation has ceased for fourteen years; it was always regular previously. She has lived hard, but has been quite temperate. The nutrition of her muscles is perfect. Her spinal column is healthy. I entirely failed to benefit her by medicine.

Chorea is one of the most generally recognised consequences of fright in children. The operation of this cause is well illustrated by the following case.

Case x. S. A. B., aged 14. She applied to be treated for chorea. When she was six years old, a neighbour frightened her by reading an account of a murder, and then blowing out the candle. The child trembled and cried much, was much frightened during the night, and her mother noticed that she became dull. Two months after, chorea slowly developed itself, by stumbling gait, and by her dropping things held in her hand. She remained subject to the disease for five years; but, during the greater part of the past year, has been entirely free from it, and as well as she ever was, though dull, and careless about play. Two months ago, however, she was again frightened; she came trembling to her mother, was dull the next day, and in a few days the choreic movements returned. She rapidly recovered under arsenic and cod-liver oil. She was cachectic, of very impressible temperament, and "very apt to have things dwell on her mind." Her heart was healthy.

Case xi. H. D., aged 9, a healthy boy, but of a rheumatic stock. He has always been afraid of being beaten. His mother acknowledges that she has often chastised him severely for playing truant; and on the last occasion, about four months ago, she took him to two policemen. About a month ago, he lost money on an errand; he came home frightened, and "all of a tremble." The trembling was observed to be most marked in his right arm; it never subsided, but extended to the lower extremity, with impairment of power of articulation. He has not been given to play since, nor is he as lively as he used to be. Previously he was always in perfect health. The choreic movements continued to be mainly confined to the right side of the body. He has always lived well. His heart was healthy. No worms were discovered in his stools after the action of medicine.

He improved very slowly; but in two months had effected considerable amendment. Zinc, steel, and quinine, failed; arsenic was then substituted, and it was under this remedy that the chief improvement took place. Cod-liver oil was combined with all the remedies.

Most of the preceding cases have a hysterical character, in the wider acceptation of the term: the following are conformed to the strictly hysteric type, and exemplify the most common result of intense emotion. Some of the cases strikingly illustrate the permanent change effected in the nervous constitution of the patient by the first illness.

Case xii. R. H., aged 30, married. She had never any nervous symptoms until eight years ago. One day, about that time, her parents were quarrelling, and her father seized a knife; she ran to wrest it from him, and fell down in her first hysteric fit. She continued in the fit for three or four hours, that interval of time being a perfect blank to her; and she remained ill for three weeks. Ever since she has been subject to returns of these fits, when frightened or excited, and they may continue to recur for a week; they are described as resembling a trance. Lately she has had some trouble; and she came to me complaining of depression, impaired sleep, horrid dreams, and spectral illusions, some of which have been remarkably vivid. Her menstruation was scanty, but frequent. Family healthy.

Case xiii. G. A., aged 48, was very nervous as a girl. When she was 28 years of age, she was thrown into a hysteric fit (tho first she had ever had) by the suicide of her master. She kept her bed for a week after this occurrence, but had only four or five returns of the fits, which then entirely ceased, until her husband died, nine years ago; she was then in hysteric fits for five hours, "and at times for a month." Since the loss of her husband, she has had much anxiety; and during the past year has had return of the fits, especially during the last three months. She sleeps indifferently, and dreams and mutters in sleep; very often she sees her husband by her bedside, "as perfect as though she were with him"; and many other things besides. One night she thought a child was going to be killed, and that some one was going to do something to her, and she "hooted till she raised the house." Menstruation has always been regular, but scanty; it has now ceased three months. Various tonics and different forms of narcotics were tried, through a long attendance, with very little success; she had no resolution to make any effort for a cure.

Spectral illusions constitute a very marked symptom of many forms of nervous disease, attended by depressed mental power. Not only are they very prominent in delirium tremens and in chronic alcoholism, but equally so in the cases of nervous depression from purely mental causes. This symptom has been described in several of the preceding cases; it constituted the chief subject of complaint in the following.

Case xiv. E. H., aged 39. She tells me that for the past three years she has lost her rest a great deal, from grief at the death of her husband and of three children. She mentioned more particularly that she was annoyed by spectral illusions of unpleasant objects, or of persons whom she has never seen; of frightful and dangerous places. These appear when her eyes are open, but much more when she closes them. She used also to suffer from aural illusions (a circumstance of far less frequent occurrence to such subjects). She subsequently became subject to depression, and feared she should lose her senses; and five years later had fits of insensibility, lasting for half an hour, with vertigo.

She has been subject to lowness and nervousness from her girlhood, but not to hysteria. Her mother also was much given to depression. Menstruation has been always regular.

I add the following curious illustration of this

..... false creation
Proceeding from the heat-oppressed brain.

Case xv. Miss M., aged 40, told me one day that she had had a "vision", which she described as follows. Going from a room, opposite to which was the open door of a parlour, she saw a widow sitting there, so distinctly, that she even remarked the hem of her veil; she saw enough of the features to believe that it was her mother, who had come to walk home with her, as she concluded, and it was only by the concurrent testimony of the family and of the servant that her mind was disabused of the erroneous idea. She tells me that she is subject to see visions: sometimes "lights", at other times persons, but never before had she distinguished features. On one occasion, at her own house, she saw a gentleman pass each of two windows along an enclosed garden; and so certain was she, that seeing

he was going where there was no egress, she opened the front door, to call him back. She is also very apt to dream, especially if excited.

She is a nervous subject; but attributes her unpleasant propensity to a mischievous trick at school, foolishly sanctioned by her governess, of dressing up ghosts, with all the ceremonial of dark corners and artificial lights. She was then only six years old, and very timid, and she had a great dread of these ghostly exhibitions. One occasion of the kind is very deeply impressed upon her mind. Ever since she has been apt to dream of ghosts, and has seen them by day.

Intense emotion is not necessarily followed by the development of any of the more striking manifestations of nervous disease, but produces a condition, hardly less serious, of depressed mental and bodily health alone. Thus

Case xvi. A. P., aged 51, was always quite well, though subject to hysteric fits when suckling, till two years ago, when she was much alarmed; an insane patient attempted to strangle her; she remained for a fortnight in a low fainting state, and then fell into a nervous condition, which has become worse and worse, characterised by lowness, tendency to tears, imperfect sleep, excessive timidity, loss of appetite, and feebleness.

Case xvii. C. S., aged 48, has enjoyed good health; but twelve months ago she lost a sister, whom she had nursed through her illness. She used at that time to lie awake, thinking of her, and fancying she saw her; and since her death, "all her thoughts have been about her." She is now much affected in speaking of her. She has never recovered her health since, has lost her appetite, and has suffered from rheumatic pains in her limbs. She is pale, flabby, and feeble.

Case xviii. S. G., aged 40. Two years ago she lost her husband by an accident; and in the course of the following fortnight, two children also, from fever. Ever since that time she has "felt herself going." She has fretted very much ever since; if she awakes, she thinks of her loss, and the remembrance of it is never off her mind. Previously her spirits were good, but they have been broken by her sorrow, and she cannot attend to her house at all. She has lost much flesh, so that her friends hardly know her. She had suffered previously from winter cough, for a year or two, but this complaint has now become greatly aggravated, with short breath and much expectoration. She has also become hysterical; she is pale and thin, and has a worn anxious look. Her chest manifests the signs of emphysema. Menstruation has ceased for eight months; it was quite regular previously. She distinctly refers her emaciation, which is considerable, to fretting.

I have met with several cases of profuse menstruation as the consequence of a profound mental impression. The following are illustrative instances. (Case ix affords an instance of miscarriage induced by fright.)

Case xix. M. R., aged 30, a very nervous subject. Her menstruation had been regular, but too abundant, when one day, six months ago, her brother cut his throat; she fell into hysteric fits, and immediately was flooded, the discharge continuing all the week. Since that period the discharge has returned profusely every fortnight.

Case xx. L. C., aged 42. Ten weeks ago, her child was killed; she had been confined about a week. In a few days after, she was taken with copious discharge of blood from the uterus, which continued for a fortnight; she has not been free for a whole week since.

Or the contrary effect may result; menstruation may be suspended, and even hæmorrhage from other organs be induced.

Case xxi. J. R., aged 25. She was suddenly cast off by her intended husband, at the time when everything was prepared for her marriage. She was very much affected by the circumstance. A week after, her menstrual period passed without any discharge, and about six weeks after she vomited blood; this happened again four months afterwards. Menstruation then returned profusely, and has continued to be profuse ever since, a period of about three years. She has suffered from disturbed sleep, and from the appearance of phantoms. Her health was perfectly good before her sorrow.

In the following case, an attack of hæmorrhage from the kidney seemed clearly due to a powerful mental emotion operating upon a sensitive nervous system. We must infer that a change in the blood constituted the intermediate state between the shock and the hæmorrhage.

Case xxii. Miss D., aged 4½ years, a feeble, irritable, nervous child, had contracted the habit of crying at night. One night, during the absence of her parents, the nurse told her she was going for a policeman, stamped on the stairs, and spoke in a very gruff voice. The parents did not return till six the next morning, and found her shrieking. From that evening the child had been constantly restless at night, awaking at about ten, shrieking, in what the mother called a hysteric fit. During two nights which she passed with her mother, she was perpetually springing up in bed, and occasionally cried out. She was equally "startlish" and timid by day. He health suffered; she became very pale and feeble; and, about ten days after the occurrence mentioned above, her mother noticed that her urine was "like water in which flesh had been washed." On examining the urine by the microscope, I found blood and mucus globules and fibrinous casts. The child had never manifested any symptom of renal disease.

By small opiates at night, and directing that she should sleep with her mother, and by adopting other means to allay nervous excitement, together with the use of tonics, the little patient was soon restored to health.

If the explanation I have offered of the cause of the hæmorrhage in this case be correct, we could not meet with a more striking illustration of the importance of recognising the mental element among the causes of disease. Had the nightly terrors and daily timidity of this little child been permitted to continue, not only would it have been impossible to cure the hæmorrhage, but it is highly probably that some more serious disease would have been superadded.

I conclude these illustrations with a case in which it seemed to me that a severe *physical* shock to the brain, occasioned by a fall, and operating upon a nervous system predisposed to disease, produced a like effect with the various *mental* shocks which I have mentioned above.

Case xxiii. I was asked by my friend Dr. Keyworth to visit Mr. S., aged 50. He had been the subject of much anxiety, and his temper had become peculiar. He had never been intemperate. At twenty years of age, he had temporary insanity, occasioned by the death of his brother. His sleep had been interrupted for some time. On Wednesday morning, he communicated to his wife his intention of going to America, as they would soon be penniless. He went to consult a friend on the subject, and had half a pint of beer and a little gin. On leaving, he opened the wrong door, and fell down the cellar-steps. He was stunned for the moment, and walked home with difficulty. On getting to bed, he again became unconscious, and remained more or less so through the night. Next day he was quite himself, but wandered in the evening; and, in the middle of Friday, became perfectly delirious. He had taken no food since the accident; he had vomited two or three times. He was crying out and struggling to be free, but did not appear mischievous; he continually called his wife by name; and for the space of an hour and a half, during which he was under our notice, kept reiterating the same two unmeaning words. He paid no attention to anything external to him; his whole attention seemed absorbed by the subject expressed by these two words. His pupils were natural; pulse about 100, feeble. Opium and small doses of tartar emetic were prescribed, in addition to some calomel, which he had been taking, and a small allowance of wine.

On the following morning, he was in the same state, uttering the same unmeaning words, and apparently much distressed by not succeeding in making himself understood. He took two drachms of tincture of opium through the night, without obtaining sleep. He paid more attention to what was said. Pulse 108; pupils rather small; eyes not injected; head cool; face pale; teeth dry and foul.

He passed another sleepless night, although the opium and tartar emetic were continued; but on the following morning was more rational, and, for the sake of satisfying him, he was permitted to put on his clothes; but he became again violent, on being prevented from going out. At night he had six or seven hours sleep, and was much better next morning; he could utter some words in succession, but, on attempting a sentence, soon became inarticulate, and was then much distressed. From this period he steadily progressed towards recovery.

University College, London. The Council held their first session for the current academical year on Saturday last, Mr. Grote, F.R.S., treasurer, in the chair. The Professorship of Botany, vacated at the close of the last session by the retirement of Dr. Lindley, was filled up by the appointment of Mr. Daniel Oliver, jun., F.L.S., librarian at the Royal Gardens, Kew. The Longridge Prize of £40, for general proficiency in medicine and surgery, was awarded to Mr. William John Smith; and the Liston Gold Medal, for reports and observations on the surgical cases in the hospital, to Mr. William Hickman.

Original Communications.

TEN YEARS OF OPERATIVE SURGERY IN THE PROVINCES.

By Augustin Prichard, Esq., Surgeon, Clifton, Bristol.

II.—Operations on the Abdomen and Lower Intestine.

[*Continued from p. 859.*]

The Radical Cure of Hernia. Case lxvi. T. B., aged 42, had been the subject of scrotal hernia at the right side for some time: he was a patient in the medical wards, and had been suffering from chronic rheumatism. He did not complain much of the inconvenience of his rupture, and, in fact, he appeared to take all his physical ailments very quietly; but I recommended the operation and he consented, and this was the first performed in this neighbourhood.

I introduced the wooden plug covered with some compound iodine ointment, which I thought would be likely to excoriate the skin sufficiently, and completed Wütz er's operation without any difficulty.

The needle and plug were withdrawn on the seventh day, and the skin remained in its new position. A compress and bandage were applied; but he had an attack of erysipelas of the part, which rendered it necessary to remove all pressure, and to apply the tincture of iodine. I gave him some iron internally, which is the treatment I adopt for erysipelas, and I have great faith in it. He soon mended and seemed well, the plug of skin remaining *in situ* and the redness having disappeared. I ordered him to be bandaged and to get up; but he got up first, and walked about the ward without the bandage, and I thought it was all right. The old man (for such he seemed to be) expressed himself as quite well, and asked leave to return home to his friends in Wales; to this I consented, and took him into the operation room to examine him once more, when, to my dismay, I found his scrotum distended by the hernia that had come down again. It was replaced, and a truss applied, which kept it well up; and he went away expressing much gratitude for the operation I had performed on him, and much better satisfied with it than I was.

Case lxvii. H. B., aged 2½ years, had congenital hernia of the right side, which was so large that trusses would not keep it up. The operation was performed in the usual way, without chloroform, the boy being perfectly steady, and not crying or shrinking at the passage of the pin through the tissues. The wooden plate was screwed down tolerably firmly over the pin and plug, which were withdrawn on the ninth day, and a bandage and compress applied.

After about three weeks, a little swelling of the scrotum appeared, and disappeared again at once, so that I was afraid that the hernia had come down again. A truss was fitted, and I kept him in the Infirmary playing about the ward for three weeks longer; there was no sign of any return of the disease, and therefore I sent him home.

Case lxviii. A. R., aged 8 years, was the subject of a large congenital hernia of the left side.

In the interval between this case and the last, one of my colleagues had performed some operations of this kind, with a fair amount of success; but not feeling quite satisfied with the results I had seen, I determined in this present instance to operate by means of the curved tube and silver wire recommended by Mr. R. Davies, of Birmingham.

After introducing the tube fairly into the canal, so as to press the end of it against the posterior surface of the abdominal muscles, the needle was thrust through with some little difficulty and the silver wire withdrawn with the needle and tube into the inguinal canal. The plug of skin was kept *in situ* by a small piece of vulcanised India-rubber fixed by a split shot, and another similar arrangement was made upon the surface of the abdomen, when the wire had been drawn up sufficiently firmly.

The next day I found him very ill, feverish and vomiting. The lower shot had slipped a little and required readjustment.

On the third day he had great abdominal tenderness and some redness around the outer puncture, and on the seventh there was a free discharge of pus from beneath the india-rubber. Upon examination the skin appeared to have sloughed to a small extent, and therefore upon the following day I removed the wire and shots, and applied, by means of a camel hair brush, some blistering fluid to the canal of skin. A deep hole appeared above through the abdominal parietes, filled with pus which ebbed and flowed with each inspiration and expiration.

I gave him good diet and a little stimulus, and the wound healed, and the parts appeared firm. A truss was fitted, and he got up, and after a time went out well. He was quite well six months after the operation, and remains so now.

The patient, in this case, went through so many perils, of peritonitis, and sloughing, and suppuration, that I determined in the next to return to the wooden plug.

Case lxix. J. M., a strong healthy man, of the age of 22, was admitted under my care with strangulated inguinal hernia of the right side, accompanied by much pain and vomiting. It had been strangulated only two hours, although he could never keep it up when at his work. I ordered a full opiate, and the application of cold; and on visiting him again in an hour, I found, instead of the tense and hard swelling in the scrotum, a soft tumour, which disappeared on the application of very slight pressure. He was beginning to feel the effect of the opium, and the spasm became relaxed.

A week afterwards, I performed Wütz er's operation, smearing the plug with blistering plaster; and it was withdrawn on the eleventh day. A compress and bandage were applied, and afterwards his truss, which kept the parts well in position.

This patient has had no difficulty in keeping up the hernia afterwards, but I was told that some swelling had occasionally returned.

I have no doubt but that the operation for the relief of strangulated hernia, might be made less frequent even than it is at present, if patients would, on the first sign of strangulation, submit themselves, as this man did, to judicious surgical treatment, which would consist in opiates, the horizontal position, cold, and the removal of all pressure and irritation from the tumour for a few hours. When once a hernia has been subjected to any rough attempts at the taxis, it seems to be irritated to resist them, and an operation becomes almost imperative.

Remarks. These results of the operation for the radical cure of reducible inguinal hernia are certainly not what we might have hoped for, considering the favourable reports given of the first operations in Germany and England; but one or two of the cases were the first done in this city, and experience was wanted. The operation thus performed, seems to be safe as far as life is concerned; which cannot be said of that modified form called "Wood's operation," in consequence of which, at least one death has occurred. It used to be a surgical maxim, that no cutting operation for the radical cure of hernia was justifiable, because of the danger to life; and although times are changed, and the attention of surgeons is again forcibly directed to the treatment of this disease, in my opinion, the same maxim holds good.

The cause of failure which was most prominent in the cases described above, was the non-adhesion and return of the plug of integuments, and this appears so likely to happen, that some other step, besides blistering the surface, should be taken; and for this purpose the instruments have been altered by different surgeons. I think it would be worth while, on the withdrawal of the wooden plug, to strip a thin slip of the integuments away from the orifice of the cutaneous canal, and put a pin through the parts to get them to unite, and close the aperture completely.

While operating upon one of the boys, I noticed a physiological fact of some practical importance in the surgery of hernia. When he was lying quiet on the table, I could easily pass my fore-finger through the external ring into the inguinal canal without any particular obstacle; but, on seeing the instrument, he became alarmed, and began to cry, and struggled so as to raise his head from the pillow, and contract forcibly his abdominal muscles. Upon attempting to introduce my finger again while he was in this state, I found the opening closed, the pillars of the ring being in contact with one another, and I had to wait until he was reassured and quieted, before I could do it.

Until I felt this, I was not aware that the contraction of the muscles could have so great an effect upon the ring as to close it, and it demonstrates the value of the well-known direction given in surgical books about relaxing the muscles in attempts to reduce a hernia. The action is performed by the *obliquus externus*, aided, of course, by the fibres of the *obliquus internus*

and *transversalis*, which are attached to the inner pillar of the external ring and the lower part of Poupart's ligament. The internal abdominal ring is, no doubt, closed by the same contraction, and it is more intelligible that it should be so. Thus, the same muscular contraction by which we make any straining effort in some of the every-day movements of the body, completely closes the openings, and by resisting the pressure from above prevents the formation of hernia.

Paracentesis Abdominis. All the operations of tapping the abdomen which I have performed have been at the request of some physician, under whose care the patient had been; and I have kept no record of the disease, or results of treatment, nor indeed of the number of cases.

We now generally tap the abdomen with the patient in the reclining posture, the abdomen projecting over the edge of the bed; and although it is a little more difficult in this way to get rid of the entire quantity of fluid, it saves the patient from the disturbance and faintness caused by the upright position, and the whole proceeding is of a much less formidable nature.

Fistula in Ano. CASE LXX. P. McC., aged 63, a tall thin Irishman, with a little cough, had been the subject of fistula for a long time. Two sinuses ran from the margin of the sphincter, one forming the true fistula communicating with the rectum, and the other backwards towards the os coccygis. I divided both with a sharp-pointed bistoury and a steel director, and had them dressed from the bottom. In twenty days the wounds had healed entirely.

CASE LXXI. J. W. had old standing fistula. I could not find the internal opening of the fistula, but as there was merely a thin mucous membrane over the point of the director just above the sphincter, I thrust it through, and bringing it out at the anus, slit across the muscle at once. This patient went out well in a month.

CASE LXXII. J. B., aged 40. The fistula was situated posteriorly to the anus, and ran up by the side of the rectum, for a considerable distance. I divided the sphincter in the usual way, and he went out well.

CASE LXXIII. A. C., aged 50. I divided the sphincter, as usual, on a director, and he went out cured in a week.

CASE LXXIV. B. D., as the last case.

CASE LXXV. R. B., a fistula running in two directions. I laid it open freely both ways, and it speedily healed.

REMARKS. The cases on which I operated were all of them favourable, and they were all cured. I use a sharp curved bistoury and a straight *steel* director, and do not give chloroform. I never find any insuperable difficulty in bringing the point of the director guided by the finger in the rectum, out through the anus. The pressure and tension of this is considerable, and is of course productive of some pain, but it much facilitates the next step; namely, the division of the parts, for the director is kept *in situ* without being held, and the bistoury may be run along the groove in the tenth part of a second. The subsequent dressing is by strips of dry lint, or the nitric oxide of mercury ointment.

Internal Hæmorrhoids. CASE LXXVI. A. B., aged 30, a married woman, who had lost a large quantity of blood from piles. I tied four large piles, under chloroform, transfixing them with a curved needle and tying them, cutting them off afterwards.

She had completely recovered in ten days, and then I removed an external pile, and she went out cured after three days.

CASE LXXVII. E. B., aged about 50, had for many years suffered from hæmorrhoids and prolapsus ani; so that the bowel came down outside the sphincter as he was walking, and blood flowed freely at those times; in addition to this, and the constant irritation he was suffering, the skin around the anus was so loose, that it was occasionally dragged forcibly inside the aperture by the levator ani, and was there so squeezed that considerable pain was produced. His general health was much impaired by this permanent source of irritation and by hæmorrhage.

At the first operation I tied a large and hard excrescence projecting on the right side of the anus from the mucous membrane of the rectum by means of strong thread, and a large curved needle, and a smaller one I cut off with a pair of scissors.

From this operation he soon recovered, and after four weeks I operated on him again, under chloroform, and removed two large oblong flaps of integument from the side of the anus, and tied one internal pile.

The recovery after this proceeding was not very rapid, but it was complete, and he got rid of all the troublesome symptoms and became a much stronger man.

CASE LXXVIII. M. V., aged about 30, was suffering from internal hæmorrhoids, and a great relaxation of the skin about the anus.

I tied, by means of a curved needle and strong thread, a large bright red shining tumour, which projected from the anus, and after passing a needle through a flap of the external skin, I cut it off and tied it up; this I repeated upon the opposite side, and the patient soon recovered without any bad symptoms.

A disagreeable adjunct to this case was, that as I was proceeding to operate, a quantity of ascarides made their escape from their place of concealment.

CASE LXXIX. M. S., aged 25. In this case I tied three large piles by means of a tenaculum and a strong ligature. She complained of great pain, and there was some bleeding. The ligatures came away in ten days, but the bleeding had not quite ceased when she left the Infirmary, and I did not see her afterwards.

CASE LXXX. A. B., aged about 50, had suffered for many years from hemorrhage, so that he became quite anæmic. I tied one large and prominent pile, from which blood was frequently ejected as much as two or three feet, and to the neighbouring unhealthy mucous surface I applied nitric acid.

When he recovered from this operation, there was still considerable hæmorrhage; and I tied two large and prominent piles by transfixing them with two tenacula, introduced separately at right angles with one another.

This proceeding appeared to be effectual, and for some months afterwards there was no bleeding. I heard afterwards that there had been a return of the symptoms.

CASE LXXXI. D. P., had lost so much blood from bleeding piles, that he had become anæmic, and was obliged to give up his work.

With the two tenacula, I tied two round and prominent piles, and he was cured, having very rapidly regained his strength.

CASE LXXXII. J. O., aged 50 years, was also obliged to give up his employment in consequence of loss of blood. I tied, in this case, four large and vascular tumours, cutting off the tops of them before the ligatures were finally tied. He recovered speedily.

CASE LXXXIII. A. B. A single prominent pile was tied in this case to stop the bleeding, and he was cured at once.

REMARKS. I have no record of the cases of external hemorrhoids which I have treated by removal with the scissors; generally after the application of a conical mass of pounded ice and salt wrapped in oil-silk, for about five or ten minutes, by which they can be frozen until they are quite white, and removed without any pain. Neither have I kept any account of several cases of prolapsus ani, and hemorrhoids, with loss of blood, in which I used the nitric acid treatment with the good success that usually follows the use of this escharotic in these complaints. I may take this opportunity of reminding my readers that this plan was first brought prominently before the profession by Dr. Houston, of Dublin, and that since his papers on the subject, in the year 1843, it has been an established and well-known method of treatment, where ligature has not been thought necessary, and it is now rather late in the day (or perhaps too early) for any surgeon to try to bring it forward as his own, or a new mode. There are few cases where the influence of surgical treatment in restoring the health is more marked than in these cases of bleeding piles; and of this fact, those which I have narrated will serve as a sample.

Fissure of the Anus. CASE LXXXIV. E. M., aged 35, with fissure of the anus, which had existed for some time. I divided the sphincter when the patient was under the influence of chloroform, and she soon mended; but afterwards the peculiar pain of the fissure returned.

REMARKS. This is the only instance which I have recorded of an operation for fissure of the anus, and the result was not thoroughly satisfactory. For some years past I have treated these cases with the nitrate of mercury ointment, touching them every other day with the nitrate of silver, and with success in every instance.

It is worthy of note, that the effect of the nitrate of silver and nitrate of mercury is much the same as that of nitric acid, except that the latter acts more powerfully as an escharotic, and is much more painful. The cases of fissure of the anus are not very numerous among the poor.

[*To be continued.*]

Transactions of Branches.

LANCASHIRE AND CHESHIRE BRANCH.

NOTES ON THE TREATMENT OF DIABETES.

By WILLIAM ROBERTS, M.D.Lond., Physician to the Manchester Royal Infirmary.

[*Read June 28th*, 1860.]

IT is not the purpose of the present communication to take a comprehensive survey of the treatment of diabetes, but simply to bring forward some new and exact evidence in favour of the ancient dietetic treatment, and likewise to offer some criticism on the claim put forth on behalf of rennet and sugar as remedies for the disease.

Dr. Budd of Bristol has recently endeavoured to bring the ancient treatment into discredit, and has laid before the profession evidence which, as he believes, warrants him in recommending a totally opposed plan, which consists in administering considerable quantities of sugar, and in permitting the patient a free enjoyment of ordinary food. Respecting the orthodox treatment, he ventures to assert "that this plan is not only of little avail in most cases in long postponing the fatal event, but often signally fails in insuring for any length of time the specific object for which it is proposed—that, namely, of keeping down the quantity of sugar discharged with the urine." (See his paper read before the Bristol Branch, and published in the BRITISH MEDICAL JOURNAL, Nov. 14th, 1857.) He further declares that "Bernard's important discovery, that the liver forms sugar as readily from nitrogenous as from amylaceous compounds, seems to take from this plan the plea of resting upon a scientific basis". Dr. Budd also attaches some importance to a statement put forth by Andral in the *Annales des Sciences Naturelles* for 1855. In this paper, it is asserted that, in a diabetic subject that had been fed on an exclusively animal diet, the sugar actually diminished on mixing milk and a small quantity of bread and vegetables with the meat. The value of this observation, however, is very seriously, if not fatally, damaged by the circumstance that Professor Andral throughout his paper estimates the sugar as so much per litre, instead of as so much per twenty-four hours; for, if the quantity of the urine were lessened, there might be a diminished excretion of sugar even with an increased proportion per litre.

The question of treatment, after all, must be looked at apart from theoretical considerations. The day has not arrived when physiology can, except in a few simple cases, direct the treatment; and we are bound to follow the teaching of experience, however rudely it may cut athwart our systematic notions. Indeed, it was not necessary to wait for the discoveries of Bernard to be convinced that diabetes had a profounder seat than the stomach, and involved a function more recondite than digestion. The sole fact, already well known, that sugar might, and generally did, continue to appear in the urine after every particle of sugar and starch had been withdrawn from the food, was itself sufficient proof of this. It is not pretended that a diet devoid of starch and sugar can eradicate the disease when it deeply affects the system; but it is impossible to read the history of the treatment of diabetes without being convinced that the Rollian method has infinitely greater claims to confidence than any other; and that, indeed, where other means have appeared successful, they have been conjoined to a total or partial abstinence from starch and sugar.

In many instances, perfect restoration to health has been attained; not only has the sugar disappeared from the urine with the restricted diet, but a resumption of ordinary fare has not been followed by renewal of the symptoms. As examples of perfect cure, I may refer, among many others, to Captain Meredith, Dr. Rollo's first case (*Cases of Diabetes*); and to the cases of Bouchardat (*Supplément à l'Annuaire de Thérapeutique pour* 1846, p. 272) and Dr. James Gray (*Glasgow Medical Journal*, vol. iv, p. 262); also to the remarkable case of Mr. Camplin, detailed by himself. (*Med.-Chir. Transactions*, vol. xxviii.)

It must be admitted, however, that complete recovery is the rare exception in this malady; and, in severe cases, the practitioner cannot reasonably hope to do more than bring about a state of what may be called *conditional amelioration*; that is to say, a state in which the patient recovers a considerable amount of force and sense of health, with a subsidence of the prominent diabetic symptoms. This state of amendment, however, is strictly dependent on total or partial abstinence from amylaceous food. A diabetic subject may in this way maintain himself in tolerable comfort for years, and be able to attend to the ordinary duties of life with moderate assiduity.

A very large proportion of diabetic subjects, if there be no chest-complication, and if the disease be taken in good time, and the treatment resolutely carried out by the patient, may be brought to this condition. Sir James Bardsley informs me that a lady under his observation has been diabetic for thirty years; but that, with the aid of a restricted diet, she preserves tolerable health, and goes about her ordinary avocations. In patients in this condition, over-indulgence in amylaceous food still produces very speedily an increased flow of urine, and recurrence of the diabetic symptoms.

That there are cases of such severity that no treatment yet devised is able to prevent or even long delay a fatal termination, must be admitted; but, compared with those that are capable of amelioration, they form an inconsiderable minority.

The following cases, although not examples of perfect cure of the disease, point out in a very distinct manner the immense advantages derived from restricted diet.

CASE I. W. A., a factory hand, 30 years of age, came under my care on the 12th of October, 1859. He presented the usual appearances of diabetes in full career. The disease had existed for about a year, and was uncomplicated with any chest-affection. The quantity of urine varied from ten to fifteen pints daily, and its density averaged 1044. He attended first as an out-patient, and the following treatment was adopted. He was directed to avoid potatoes, and to use as little bread as possible; but to partake of eggs, meat, and green vegetables, as far as his means would permit. With this regimen, he was ordered a pill containing a grain of opium, with a quarter of a grain of sulphate of iron and half a grain of quinine, three times a day. Under this treatment, he continued to attend; the opium was gradually raised until, at the end of a month, he took daily sixteen grains. For seven months the same treatment was continued, with marked benefit. The diabetic state abated; the tongue became moist; and the urine fell to five and six pints, with a density of 1040. The sugar excreted daily averaged 4400 grains (nine ounces). He gained strength and some weight, and was able to resume his occupation for a time. His condition, however, remaining stationary, at my request he entered the Infirmary on May 8th, 1860.

Up to this time, the plan of treatment embraced a partially restricted diet and large doses of opium. I was now desirous of effecting a more complete banishment of amylaceous and saccharine compounds from the dietary, and of reducing the enormous doses of opium which he was taking. The drug had been withdrawn, without the patient's knowledge, for about three weeks, in the course of his attendance as an out-patient; but he had become so manifestly worse in every respect, that I was compelled to resume its use.

On his admission into the Infirmary, in order to observe the effect of ordinary food and abstinence from opium, he was put upon the common diet of the house, and all medicines were discontinued. The effect of this change was a sudden reappearance of all the untoward symptoms, intense thirst, and a sense of great debility. An alarming cough was also remarked. The condition of the urine was as follows:*—Daily discharge of urine, 205 oz.; daily secretion of sugar, 7400 grains (15 oz.); average density, 1042.

Three days of this regimen had forced him to keep his bed, and I was abundantly satisfied of the conservative power of the previous treatment.

I now gradually withdrew all amylaceous substances, and substituted meat, fish, eggs, and beef-tea. He was also allowed eight ounces of brandy daily. After the change was completed, the diet was absolutely devoid of starch and sugar. Under this diet, the urine altered greatly for the better. During the first week of the restricted diet, the daily discharge of urine was 61 oz.; daily secretion of sugar, 928 grains; average density, 1032. The general symptoms also improved, but not in proportion to the amelioration in the condition of the urine.

A second week of the same treatment brought down the urine to—daily discharge, 56 oz.; daily excretion of sugar, 658 grains; average density, 1028.

I was now met with the difficulty that so many have encountered in pursuing this treatment; namely, a total failure of the

* The determinations of sugar in this paper were all made by the volumetrical method with Fehling's test solution.

appetite, and consequent alarming depression of all the vital powers. To obviate these untoward events, he was allowed bran bread and the free use of green vegetables—cabbage, lettuce, and water-cresses. A grain of opium was also given three times a day. The diet was therefore still starchless and almost entirely devoid of sugar. Decided amendment followed this change, and in a few days the returning strength and cheerfulness kept pace with the improved appetite and increasing weight.

During the remainder of his stay in the Infirmary, a period of two months, no further change of importance was made in the diet or medicine. The patient's weight on admission was 97 lbs; but it rapidly sank in the first few days, and at the end of three weeks it was only 91 lbs. From this time onward, however, the weight began to increase, and it went up gradually to 105 lbs., which point it had reached the week of his discharge.

The state of the urine for the last two months was remarkably constant. The daily discharge varied from 40 to 60 oz.; the daily excretion of sugar, from 800 to 1000 grains; the average density, from 1030 to 1033.

The excretion of sugar ruled higher than when the diet was exclusively animal. This I attributed to the improved appetite, which enabled the patient to take more nourishment, rather than to any untoward influence exercised by the green vegetables.

The general results of the treatment may be summed up as follows:—The weight had increased eight pounds. The proper diabetic symptoms had altogether disappeared. There was neither inordinate appetite nor thirst. The skin was moist and soft, and the tongue the same. The urine was reduced within the natural proportions. There yet remained between 2 and 3 per cent. of sugar in the urine, and its density still averaged 1030-33. The strength and weight of the patient also were yet considerably below the normal standard.

It is also worthy of note, that this man was remarkably influenced by opium. At three different times the opium was withdrawn, and each time with disastrous consequences. It was not that the excretion of sugar increased; the drug appeared not to have the least influence in that respect; but its withdrawal was immediately followed by a sense of weakness, depression of spirits, and diminution of weight; and, although I persevered without its use for ten days and a fortnight, the patient never made way—that is to say, never gained strength and sense of heartiness—until the narcotic was restored to him. A dose of a grain three times a day appeared to answer quite as well as the larger quantities exhibited during his attendance as an out-patient.

Case II. The next case yielded still more favourable results than the one just related. It concerned a well grown young woman (E. H.) of sixteen, also a factory hand, who had been diabetic for three years. She was admitted into the Infirmary March 26th, 1860. The disease was uncomplicated, and exhibited in great severity the outward signs of diabetes in an advanced stage—a harsh dry skin, a tongue like a piece of lean broiled ham and deeply furrowed, abdominal pains, constant drowsiness, a consuming thirst, and great emaciation. For a fortnight after admission, she was ordered the common diet of the house, which includes a liberal allowance of meat, potatoes, and bread. A warm bath was administered every night, and a weak dilution of phosphoric acid was permitted as a beverage.

The state of the urine during the last six days of this fortnight was as follows:—Mean daily discharge of urine, 210 oz.; mean daily excretion of sugar, 10,400 grains (22 oz.); average density, 1042; weight, 80 lbs.

The diet was then totally changed. Milk and all vegetable compounds were withdrawn absolutely; and, instead, she was allowed an unlimited supply of eggs, fresh meat, and beef-tea. No evil result followed this sudden change; indeed, it was not in reality so abrupt as I had desired it should be; for the patient is of very weak resolution, and, in spite of my objurgations, she surreptitiously procured some of the forbidden articles of diet—oranges, treacle-toffy, and even loaf-sugar—and privily consumed them. Throughout the treatment of the case, some uncertainty has crept in, from her instability. She was most carefully watched, and made to confess, from time to time, her delinquencies, which, although repeated, were not serious in extent, and may be disregarded in considering the main result.

On the very first day of animal diet, the urine fell from thirteen pints to three, and the sugar from 11,840 grains (25 oz.) to 1840 (4 oz.). At the end of eleven days, the mean results since the change were—Daily discharge of urine, 70 oz.; daily excretion of sugar, 1860 grains; average density, 1034; weight, 81 lbs. The general condition was also considerably improved; the skin softer; the tongue less fiery; the thirst and appetite allayed.

On the 21st of April, bran cakes were allowed, in addition to the animal diet, much to the satisfaction of the patient, who enjoyed them exceedingly; and I may add, she still continues to relish them. From this date to May 16th, a period of twenty-six days, no further change was made. The results are exhibited in the following table. I have divided the period into weeks (the last two of which contain but six days), for the purpose of displaying the gradual progress.

	Average daily quantity of urine, ounces.	Range of density.	Sugar each day, grains.	Weight, lbs.
First week	54	1025—1033	1160	81
Second week	67	1021—1031	970	84
Third week	51	1022—1035	870	85
Fourth week	49	1019—1035	690	86
Entire period	55	1019—1035	897	

With this increase of weight, her general condition had improved; the tongue had become pale and moist, but it was still mapped on the surface, and unnaturally smooth.

On the 16th of May, I determined to try the effect of milk; and for the ensuing twenty-eight days she was allowed three pints a day. This indulgence had no unfavourable influence on the general well-being, nor on the quantity of the urine; but the daily excretion of sugar increased immediately, as might have been expected. During this month, she gained five pounds in weight. The following shows the exact state of the urine:—Average daily discharge of urine, 49 oz.; range of density, 1032-1044; sugar secreted per day, 1260 grains; weight on June 12th, 91 lbs.

On the 12th of June, the milk was withdrawn, and gluten bread was substituted for bran cakes. Cabbage also was allowed with dinner. The effect of the change was to reduce the quantity of urine to 41 oz. per day, and the sugar to 1020 grains. The weight went on increasing up to the time of her discharge, when she weighed 98 lbs. Her general condition was now such that an observer ignorant of medical matters would have pronounced her cured.

The general results stand thus. In eleven weeks of abstinence from amylaceous food, and nearly total deprivation of sugar, the patient has gained eighteen pounds in weight. The outward signs of diabetes have disappeared: the skin has been restored to its natural softness; the thirst and inordinate appetite have been allayed; the flow of urine has been brought within the natural compass. This patient sleeps soundly, relishes her food, has neither pain nor ache, and is so far recovered in strength that she is able actively to assist the nurses in the work of the wards.

One remedial agency, that has been endowed with specific curative power by M. Mialhe, was tried in this case. I allude to alkaline medicines. E. H. was placed for a fortnight under the full influence of bicarbonate of potash. She took daily 320 grains, in divided doses; and the urine was thereby rendered freely alkaline. During the week preceding the alkaline treatment, 1160 grains of sugar were voided daily. In the first week of the alkaline treatment, 970 grains a day were separated; and in the second week, 870 grains. In the week following the withdrawal of the alkali, the sugar amounted to 690 grains. This would seem to show that the alkali had no perceptible influence on the separation of sugar. I have tried this remedy before, in another case; and the result I obtained then, as now, was nugatory.

It would appear also from this case that milk, though it contains sugar, and causes increased excretion of sugar by the kidneys, is not always markedly prejudicial to the general well-being of a diabetic subject. This accords with general experience; but there are cases (see Case IV) where even milk is inadmissible.

Case III. I am indebted for my third observation to the courtesy of our esteemed President, Dr. Wilkinson. It concerned a little, rough-haired, fair-complexioned boy of nine, W. K., who was admitted into the Royal Infirmary, under Dr. Wilkinson, on April 9th, 1860. He was a factory hand, working half-time. On admission, he was in a state of extreme emaciation, unable to leave his bed from debility. His face was pinched, and flushed with a hectic redness; the skin was arid; and the abdomen unduly prominent. There was excessive thirst. He lay

dosing through the day, but was easily roused. He answered questions intelligently, although very sluggishly. The chest was free from signs of disease, but the abdomen was strongly suspected to be the seat of tuberculous deposits.

An inordinate thirst had been noticed by his parents six months since, but the health did not seriously give way until two months ago. Previous to the present complaint, the lad had enjoyed excellent health.

For nine days he partook of the common diet of the house, and had six pints of milk, acidulated with a weak dilution of phosphoric acid, as a beverage. A pill, containing one-third of a grain of opium and two grains of sulphate of iron, was administered three times a day.

The condition of the urine under this regimen was as follows:—Average daily discharge, 160 oz.; range of density, 1033-1043; daily excretion of sugar, 5380 grains (11¼ oz.). His weight was 48 lbs. During these nine days, he improved somewhat in strength, and became more lively.

On April 18th, ordinary bread was replaced by bran cakes; and the medicine and milk were continued. Four days of this fare reduced the average daily flow of urine to 95 oz.; its range of density, to 1036-1038; the daily excretion of sugar, to 3150 grains (6 3-5 oz.).

On the 22nd of April, cabbage was ordered for dinner, instead of potatoes—milk and medicine as before. For two days he got on very well on this diet; and the urine fell to 60 oz., and the sugar to 1550 grains (3¼ oz.). The tongue also became moist; the thirst declined; and the belly grew decidedly softer and less protuberant. On the third and fourth days, however, the appetite vanished entirely; he could not touch his meat or the bran cakes, and he lost a pound in weight. The urine fell to 40 oz., and then to 30 oz.; and the sugar to 1220 grains (2½ oz.).

Seeing the boy unable to eat, Dr. Wilkinson ordered him an onion with breakfast and dinner, in lieu of cabbage. This change had the desired result. The appetite returned, and he could now eat his bran cakes with relish. The opium was increased to two grains a day.

This treatment was continued for eleven days, during which he made doubtful progress. He increased in weight to 52 lbs.; but the urine and its saccharine impregnation increased, and the tongue became redder. The exact results were:—Average disharge of urine, 72 oz.; range of density, 1035-1040; daily excretion of sugar, 2090 grains (4¼ oz.)

On the 7th of May, the onions were withdrawn, and he was put on the previous diet of bran cakes and cabbage, with fleshmeat. The appetite fell away immediately; he could not eat his bran cakes. In a day or two, however, having now the run of the wards, he began to satisfy his intense craving for bread by begging some from the other patients. In five days he grew much worse; he was scarcely able to leave his bed; and his weight sank to 50 lbs. The urine rose to 110 oz., and the sugar to 3130 grains (7 1-7 oz.).

After the discovery of his delinquencies, he was more narrowly watched, and strictly limited to his prescribed diet; but he could not eat the bran cakes, nor indeed his meat; so that, although the state of the urine forthwith improved (its quantity being reduced to 22 oz., with a specific gravity of 1021, and daily secretion of sugar of only 230 grains, under half an ounce), yet his general condition was most deplorable. In this dilemma, Bouchardat's gluten bread was tried, and with happy effect. The opium was also pushed on to five grains a day.

The boy remained in the Infirmary ten days after this change, and made rapid progress. He ate his food with relish. He became much less ventricose, and his weight advanced to 57 lbs. On the day of his departure, he was so improved in strength that he was able to walk home, a distance of four miles. The state of the urine was as follows:—Average discharge, 44 oz.; range of density, 1032-1038; daily excretion of sugar, 1120 grains (2½ oz.).

This case exemplifies in a remarkable manner the difficulties and the advantages of the dietetic treatment. When amylaceous food was allowed, the proper diabetic symptoms made progress; when these were withdrawn, the desire for food and the power of taking it vanished. Between Scylla and Charybdis the physician had to steer. Was the patient to be permitted to die of the diabetes, or were the disease and his life to be starved out together? Bouchardat's bread seemed in this instance favourably to solve the problem; it preserved the appetite for meat; and, from its scanty proportion of starch, it did not produce any aggravation of the proper diabetic symptoms.

[To be continued.]

Rebiews and Notices.

THE REPARATIVE PROCESS IN HUMAN TENDONS, after Subcutaneous Division for the Cure of Deformities; with an Account of the Appearances presented in Fifteen *Post Mortem* Examinations in the Human Subject; also a Series of Experiments on Rabbits, and a *Résumé* of the English and Foreign Literature of the Subject. Illustrated by Seven Lithograph Plates and a Series of Woodcuts. By WILLIAM ADAMS, F.R.C.S.; Surgeon to the Royal Orthopædic and Great Northern Hospitals; Lecturer on Surgery at the Grosvenor Place School of Medicine, etc. Pp. 175. London: Churchill. 1860.

MR. ADAMS has for some time been engaged in the careful investigation of the process by which tendons become reunited after division. On this point there has been a difference of opinion; some surgeons—Mr. Tamplin, for instance—holding that the new tissue which is formed between the ends of the tendon is gradually contracted, so as to form a *linear cicatrix*; others, especially the author of the present work, maintaining that there is a true reformation of tissue, which remains and performs the office of tendon.

The results to which Mr. Adams has been led by his carefully made observations and experiments will be clearly understood from the following extracts from his work.

"1. Tendon is one of the few structures of the body, such as bone, cellular-tissue, nerve-tissue, and blood-vessels, capable of reproduction or regeneration, and the newly formed tissue, acquires, within a few months of its formation, the structural characters of the old tendon so perfectly as to be, under the microscope, with difficulty distinguishable from it, but it does not acquire (at least it has not up to three years, the latest period to which these observations extend) through its substance the uniformly opaque, pearly lustre of old tendon; in the mass it retains a greyish, translucent appearance, streaked only with opaque fibres at a late period, so that the recent section affords an easy method of distinguishing the new from the old tendon.

"2. When a tendon has been divided subcutaneously, for the cure of club foot, and its cut extremities are separated and held apart during the active period of the reparative process,—*i.e.*, the first two or three weeks (as by mechanical extension employed with variable rapidity in different cases, according to the activity of the reparative process), new tendon is formed, of variable length according to the extent of the separation, for the purpose of reuniting the divided extremities of the old tendon. The greatest length of perfectly formed new tendon thus obtained, and equal in bulk and thickness to the tendon it served to unite, which I have seen in the human being, is two inches and a quarter, and this was in the tendo Achillis of a girl, aged 9 years, a year and a-half after the tendon had been divided by Mr. Curling. It is probable that when the tendo Achillis has been divided in children for the cure of deformities, such as congenital varus, the length of new tendon is generally from half an inch to an inch, and in adults from one to two inches.

"3. The process, by which new tendon is formed for the purpose of reuniting the separated extremities of a tendon divided by a subcutaneous section, is essentially similar in animals and in man. The perfection of the process is in direct proportion to the absence of extravasated blood and inflammatory exudation; and the sheath of the tendon, when consisting of loose-textured areolar tissue, as in the tendo Achillis, and other tendons surrounded by soft tissues, is of importance: first, in preserving a connexion between the divided extremities of the tendon; secondly, in furnishing the matrix in which the nucleated blastematous, or proper reparative, material is effused; and, thirdly, in giving definition and form to the newly developed tendinous tissue.

"4. The ultimate perfection of the reparative process by the regeneration of tendinous structure, and the elongation of a shortened muscle by the insertion of a portion of new tendon into its length, equal in strength to the old tendon, and closely resembling it in its microscopic characters, is marred only by the adhesion of the deep surface of the new tendon, to a greater or less extent with the neighbouring fibro-cellular tissue. These adhesions may limit the free play of the tendon, but will not

interfere with sufficient motion being obtained. In cases of relapsed deformity, however, in which the operation of tenotomy may be repeated, these adhesions will, in many cases, prevent sufficient separation of the divided extremities of the tendon being obtained. Therefore, if much separation be required, a second operation is generally unsatisfactory in its result, and beyond a second operation, very little advantage can ever be obtained from operative treatment. Hence the necessity of the closest attention to the treatment after the first operation, and the explanation of the complete failure after repeated operations for the cure of deformities.

"5. The perfection of the reparative process, especially in non-congenital cases of deformity, in which more or less paralysis frequently exists, and in which the reparative powers are proportionably feeble, may be interfered with by injudicious after-treatment, especially by the too early and too rapid mechanical extension, so that an elongated, and attenuated uniting medium may be formed. And also, when tendons situated in dense fibrous sheaths of a tubular form are divided, there is great danger of complete non-union, the divided extremities of the tendon becoming adherent to the inner surface of the sheath without any direct connexion with each other. This I have shown to occur in the posterior tibial tendon, when divided immediately behind the inner malleolus. The practical rule, therefore, is never to divide a tendon as it passes through the denser portions of its sheath, and when the operation is performed near to such portions of the sheath, the extension must be conducted very slowly.

"6. There is no reason for believing that, in the treatment of deformities by tenotomy, direct approximation and reunion of the divided extremities of the tendon must be first obtained, and that the required elongation is afterwards to be procured by gradual mechanical extension of the new connecting medium, as we should stretch a piece of india-rubber, the stretching process occupying at least a month or six weeks, according to the doctrine and practice of some orthopædic authorities of the present time; but, on the contrary, all my observations lead me to consider that the required length of new tendon should be obtained during the time occupied in its formation, *i.e.*, from about two to three weeks under the ordinary conditions of health, but in paralytic cases, and also in patients of feeble health, this period may be doubled. Therefore, the object of gradual mechanical extension during this time is to *regulate the length of new tendon*, first, *by forcibly overcoming ligamentous resistance in some cases*, especially in those of long standing and of congenital origin, in which it is difficult to separate sufficiently the divided extremities of the tendon; and secondly, *by preventing a too rapid and excessive separation of the extremities of the tendon in other cases*, especially in those of non-congenital origin, in many of which the ligaments offer no resistance, and the reparative power is so feeble from partial or complete paralysis that rapid extension, separating too widely the divided extremities, would endanger their union; and also when tendons situated in or near dense tubular sheaths, as the posterior tibial, are divided, because it has been shown that in such situations, if the divided extremities be widely separated complete non-union may result in consequence of the absence of a connecting cellular sheath. Hence the mechanical extension must always in its rapidity be proportionate to the activity of the reparative process, and in the tendo Achillis, and other superficial tendons; this can be judged of by external examination and manipulation.

"7. The new tendon remains during life as a permanent tissue, and as an integral portion of the tendon, the divided extremities of which it has been formed to reunite. I see no reason for believing that the newly formed tendinous structure has any disposition to undergo a process of gradual contraction, such as we see taking place in the cicatrices of the skin after burns, to which it has been compared, and that ultimately it becomes absorbed, the muscular structure at the same time becoming elongated by the force of the contraction of the cicatrix, so as to allow of the reapproximation of the ends of the divided tendon, and the formation of a 'linear cicatrix.'

"8. The effect of this permanent elongation of the tendons of retracted or shortened muscles—*i.e.*, muscles shortened by adapted growth or adapted atrophy, is not only to correct deformities mechanically, by increasing the length of the tendons, as a carpenter would lengthen a piece of wood by the insertion of another piece of wood, and thereby allowing certain bones to be brought into their normal anatomical relations; but that, having obtained this end, its higher physiological or dynamic object is to allow of motion being gained, or, as it may happen to be, regained, in joints which were previously rendered fixed and motionless by the retraction and structural shortening of the muscles. The mechanical conditions necessary for motion are thus obtained, and if the muscles themselves, both those operated upon and their antagonists, are in sufficiently healthy condition, voluntary motion is also obtained, and is followed by an increased development of the muscular structure, so that the bellies of the muscles operated upon progressively enlarge, and in case of congenital talipes varus, the gastrocnemius and soleus muscles thus brought into use, attain in a few years a very fair proportionate size, instead of undergoing a process of progressive atrophy from disuse, as seen in cases of clubfoot which have remained unoperated upon till the period of youth or adult life. The effect of the operation in increasing the size of the calf is very conspicuous, when a case, which has been successfully operated upon at an early age, is compared with a case which has not been operated upon or subjected to other treatment: and it is thus proved that, when the possibility of muscular improvement exists, the muscular strength of the limb is very materially increased, instead of being diminished, by the operation of tenotomy; in fact that tenotomy in favourable cases must increase the power of the muscles operated upon, and also of the antagonist muscles. The extent to which muscular power is restored, with its attendant advantages, must of course depend upon, and be proportionate to the healthy condition of the muscles, and *vice versâ*; so that, in cases of complete atrophy and degeneration of the muscular structure, as in old paralytic cases the results of the permanent elongation of the tendons is purely mechanical.

"9. When recontraction of the foot takes place, and the deformity returns at a distant period after tenotomy, this does not depend upon absorption of the new material, or new tendinous tissue formed previously to unite the divided extremities of the old tendon; but upon the structural alterations taking place in the muscular tissue, either of an active character as in spasmodic cases, or of a passive character as in paralytic cases, and those produced by position, etc., in which the muscles, by a process of *adapted atrophy*, simply adapt themselves to the altered mechanical relations of the parts with which they are connected."

Besides giving the account of his own observations and opinions, the author has collected the remarks of various British and foreign surgeons regarding the reparation of tendons, and has thus made the work a most complete monograph on the subject; if completeness may be said to be wanting to inquiries so ably carried out as those in which Mr. Adams has been engaged.

Further Observations in Several Parts of Surgery. By Benjamin Travers, Fellow of the Royal College of Surgeons of England; Consulting Surgeon to the Economic Life Assurance Society; and formerly Resident Assistant-Surgeon at St. Thomas's Hospital. To which is appended an Original Memoir on the Nature and Treatment of some Unusual Forms of Eye-Disease. By the late Benjamin Travers, F.R.S., one of Her Majesty's Serjeant-Surgeons. Dated 1828. Pp. 205. London: Longman and Co. 1860.

This volume consists of a series of essays on various surgical subjects, on which Mr. Travers has enjoyed the opportunities of making observations, and regarding which he now sets forth his opinions for the benefit of the profession. The work is a continuation of one of a similar kind which was published by the author several years ago.

In his Introduction, Mr. Travers expresses his opinion that the refinements in pathological anatomy which have been carried out in the present age are not calculated to further the progress of medicine and surgery. He believes that "there is now-a-days an evil tendency or desire to bring men's thoughts down to the dreary level of a material proof, which is subversive of that method of theoretic reasoning founded upon a close and prolonged observation of morbid processes as they go on during life." But, granting that the microscope and the test-tube are apparently in advance of or at variance with our remedial means, we believe that the therapeutic reasoning to be derived from their indications has yet to be worked out—that it *will* be worked out; and that, therefore, no investigations into morbid structure are to be despised.

Mr. Travers also deprecates the tendency to operative interference in cases where it can be of no use, or must end in actions destructive to life. While we would agree with him in condemning such procedures, we cannot think, as he apparently does, that, as a rule, the tendency of modern surgeons is towards their performance, or that too great regard is paid to local manifestations of disease, to the neglect of the injury which the system has suffered. Nor can we at all agree with him when he says that

"There are some operations which should be wholly condemned as a class; such are a large proportion of the rhinoplastic performances, many of the jaw or face cases, and all those large and useless dissections made with an avowed purpose of removing deformity after a burn."

On the administration of medicines, Mr. Travers has some remarks worthy of attention. He objects to methods which "exhibit a tendency to teaze the system," and often do more harm than good: such as mercury and iodine. He advocates the giving of one medicine at a time, in small doses, spread over a considerable period.

The next essay consists of Observations on Unusual Forms of Injury occurring at the Hip-joint; being a memoir read before the Royal Medical and Chirurgical Society, on February 15th, 1854. Of the cases here related, one was, in Mr. Travers's opinion, partial dislocation of the head of the femur: the others relate to real or supposed fractures of the cervix, and to certain changes in the head of the bone.

A case of Dislocation of the Left Thigh Bone into the Sciatic Notch, which was reduced by extension upon the heel *in perinæo*, forms the subject of another essay.

Mr. Travers republishes some observations on the Nature and Treatment of Boil and Carbuncle, which originally appeared in the *Lancet* for 1857. He argues in favour of the application of caustic potass in preference to excisions; and advises attention to the secretions, and the judicious employment of a tonic plan of treatment, medicinal as well as hygienic.

Some Clinical Remarks on Hernia, which form the next chapter, will repay perusal.

Mr. Travers next publishes a Lecture, delivered some years ago, at St. Thomas's Hospital, on Hæmorrhage, and the Means to be employed for its Suppression; Remarks on the Use of the Ligature; also on some Points connected with Occurrence of Secondary Hæmorrhage from Large Arteries.

The next chapter is on a Case of Acute Tetanus following an Operation for the Radical Cure of Hydrocele by Injection, which terminated fatally in thirty hours. It is followed by some good remarks on the treatment of tetanus.

Some Remarks on M. Velpeau's Analysis of Breast-Diseases complete the contributions made by the present author. Mr. Travers has some hope that cancer may one day be cured by medicinal means. He says:

"The alkaline salts certainly seem, on some occasions, either to be corrective of or subsidiary to the supply or defect, as the case may be, of certain saline ingredients of the blood, which are clearly concerned and have to do with, the production and propagation of this complaint, and if hereafter it shall be found that cancer may be cured, or even permanently controlled by the use of medicine, this is the route which will be taken to arrive at that desirable event. It is a common error amongst the moderns to give too much attention to the progress of local changes only. This isolated contemplation of a diseased and decaying tissue belongs to a miserable solidism, which may be satisfactory to the morbid anatomist but it does not help the surgeon. The chemist appears to be the only true guide in this our darkness, and it is by no means certain that his researches may not some day establish the conditions upon which we might proceed to combat successfully the first approach of a cancerous disease." (Page 160.)

The observations on Eye-Diseases of the late Mr. Travers consist of a letter to Dr. Bauer of Hesse-Cassel, who was desirous of receiving information on the progress of the subject in this country. It is a very good epitome of the knowledge of the pathology of the eye which was possessed by British surgeons in 1828.

Although on some points we are not able to agree with Mr. Travers in his opinions, we find in his book much instruction, and attach value to it as being the result of the labours and cogitations of an observant practical surgeon.

British Medical Journal.

SATURDAY, NOVEMBER 10TH, 1860.

WASH, AND BE CLEAN.

THE Quarterly Report of the Registrar-General just issued has this significant sentence: "The weather of this quarter (ending September 30th) may be looked upon as an experiment upon the health of the people." What we have been pleased to stigmatise as the most wretched and unseasonable year within the memory of man is now nearly past; and, as far as we have yet "taken stock of it", we find, that, on the score of health at least, we have sadly maligned it. Had there been no such person as a Registrar-General, and had we only to depend upon the experience of hearsay evidence, the probability is that the year 1860 would have been branded for the next generation as preeminently a sickly season. We should have been told that in this year all nature was depressed; that the flowers had no perfume, the fruit no flavour, the cattle no food, and man no enjoyment. All these charges against the year that is past are true enough; nevertheless, we put aside our feelings, banish all sentimentality, and consult the national register; and lo! we are forced to confess that we have been labouring under a delusion, as far as the public health is concerned; and the poor year stands forth as the most remarkably healthy one we have had perhaps in the century. How could we more forcibly illustrate the value of statistics? The three months of July, August, and September, usually the finest in the year, were this season miserable beyond description; their mean temperature being only 56.2°, or less by 3.3° than that of any corresponding season for eighty-nine years; that is to say, there are very few living men who have experienced so cold a period of three summer months. With this low temperature there was a very large rainfall; indeed, the abundance of the rain must be considered one of the main causes of the low state of the thermometer. For years there has been a deficiency in the rainfall; this season we have made up for it; the excess during the driest months of the year has been 2.1 inches. Nevertheless, under these wretched summer skies, death has ceased to be as busy as usual amongst us. According to the general average of the season, the rate of mortality should have been twenty per thousand; it actually was only seventeen per thousand. Thus three living beings out of every community of a thousand owe their lives to the wretched weather!

There is a very prevalent opinion that much of the diarrhœa existing in the summer months is attributable to the eating of fruit—especially unripe fruit; hence fruit is unnecessarily denied by fond mothers to little children, and the bounties of Providence are practically stigmatised as a nuisance. This summer we have been able to test the value of this universal

opinion; and we must say the evidence goes to prove that fruit is not guilty. It cannot be denied, for instance, that there has been an abundance of fruit, and that it has been far less ripe than usual; nevertheless, diarrhœa—the bugaboo of fruit-eaters—has been reduced to a minimum. The inference seems to be, that this disease is not a consequence of enjoying the bounties of the Almighty, but simply of a high temperature.

The improved condition of the public health during the past quarter is chiefly conspicuous in towns; and the Registrar-General believes that this is a consequence of the excessive rain-fall flushing the sewers and carrying off all animal impurities. Thus in Wolverhampton, Walsall, West Bromwich, and Dudley, where the water-supply is usually deficient, the late rains have reduced the mortality enormously; and in Birmingham the deaths during the summer have fallen one third part. The Registrar-General seems inclined to draw a general principle from these facts; viz., "It is probable that the ordinary water-supply of a place is bad, where its mortality is greatly reduced by heavy rains."

In the north-western counties, the decrease in the mortality is not so great as in other counties; and this is attributed to the great prevalence of middens in Lancashire. This is a very instructive fact, which sanitarians should not lose sight of; when the excrementitious deposits of a family are deposited where they cannot be carried away, the increased rain-fall only acts as a solvent to produce unhealthy exhalations. The value of an abundant water-supply to towns is made manifest by the results of the summer just passed. We cannot command the rain in the heat of summer, it is true, but we can always command water; and, if the health of towns in the summer season mainly depends upon the regularity with which noxious matters are removed from the sewers by flushing them, the existence of excessive disease may be taken as a measure of the neglect of the authorities. If the exceptional weather of 1860 may be said to have settled this point, its gloomy skies and wintry temperature will have proved more advantageous to us than the most splendid summer, with its usual concomitants of abundance and prosperity.

THE WEEK.

The death of Sir Charles Napier has created a vacancy in the representation of Southwark; and, among the candidates who have already offered themselves for the post, we find Dr. Challice is very highly spoken of. This gentleman is deputy-coroner for East Middlesex. Mr. Wakley, it is supposed, will come forward. We should hail with pleasure the return of either of these gentlemen, as our profession just at the present moment is sadly in want of a vigorous representative in Parliament. The number of medical men in Southwark must be considerable, and their influence great. We trust that, in the coming contest, they will support their professional brethren with a right good will.

Dr. Hernandez, of Cuba, has published a memoir of the salubrity of the Isle of Pines, on the American Coast. The Isle of Pines, a small island of about one hundred and eighty square leagues in extent, lies in the Caribbean Sea thirty leagues south of the island of Cuba. It was for a long period reputed to be a place of no account, infested with ferocious crocodiles and annoying and pernicious insects, fitted in fact, only as the haunt of wreckers, pirates and malefactors. It has, however, of late years attracted the attention of Dr. Hernandez and a few others who, from their own personal investigations, speak in high praise of the salubrity of its climate and the remedial qualities of its numerous mineral springs. Dr. Hernandez, especially, refers to numerous cases as falling under his own immediate notice, in which tuberculosis of the lungs, scrofula, chronic inflammations of the mucous membranes generally, gout, rheumatism, asthma, paralysis, ophthalmia, otitis, cystisis, epilepsy and various nervous, uterine and cutaneous affections had been either very materially benefited or entirely cured by a prolonged residence upon the island, and a properly regulated use of its mineral waters, internally and externally. The Isle of Pines is described by Dr. Hernandez is one of peculiar beauty—possessing a soft, dry, and balmy atmosphere; a clear and beautiful sky, an equable temperature, and the most agreeable prospects. In all directions are seen crystalline brooks of cool, pure, delicious water—meadows enamelled with brilliant flowers of every hue, or woods of gigantic pines, whose thread-like foliage, agitated by the gentle breeze, utters continually a grateful and soothing murmur. If the eye is raised from the many pleasing objects which close at hand abound, and is directed to the distance, it rests upon the steep slope of some commanding eminence, or the peak of one or other of the mountains that occur in nearly every portion of the island, separated by intervening valleys rich in flowers and verdure. The island rests upon a rocky base, the nucleus of which, in its western sections, consists of granite, granitic marble, and even pure marble. The valleys are covered with or formed in a bed of carboniferous earth, upon the surface of which sparkles a light stratum of ferruginous and silicious sand. In the eastern portion of the island there occurs a calcareous uranitic rock of plutonic origin, produced rather by condensation than by sedimentation, differing widely from the argillaceous and arenaceous or the calcareous lands prevalent in all the western portion of the island of Cuba. The mineral waters, of which springs abound in most parts of the island, are impregnated with oxygen, and carbonic acid gases, chloride of sodium, sulphate of lime, carbonate of lime, iron, magnesia, chloride of calcium, nitrate of lime, silex, and extractive organic matter. The temperature of these waters is usually about 82° of Fahrenheit's scale. The Isle of Pines has a fine port, which, if encouragement were held out to induce an emigration to its rich and fertile valleys, of an industrious and enterprising population, would secure for the island a large and profitable commerce with the neighbouring coast of Mexico.

Thomas Smethurst, who was tried at the sittings of the Central Criminal Court, in Oct. 1859, for murdering Isabella Banks by poisoning, and sentenced to be hanged at Horsemonger Lane Gaol, but whose case at the time created much excitement, and caused considerable discussion and controversy in the journals, which resulted in his pardon for the murder, and his being put on his trial a second time for bigamy, will be released from Wandsworth House of Correction during the present month, the sentence of twelve months imprisonment, passed upon him for the last named offence, having expired.

Association Intelligence.

VACANCY IN THE EDITORSHIP OF THE BRITISH MEDICAL JOURNAL.

As the office of Editor of the British Medical Journal will become vacant on the 31st of December next, it is requested that all candidates for the appointment will communicate, not later than the 17th of November, with Dr. Williams of Worcester, and forward to him, with their testimonials, the scheme they propose for conducting the Journal.

Charles Hastings, Knt., M.D., etc.,
President of Council.

Worcester, October 23rd, 1860.

BRANCH MEETING TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
Bath and Bristol. [Quarterly Meeting.]	York House, Bath.	Thurs., Nov. 29th, 7 P.M.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, November 5th, 1860.

A. B. Garrod, M.D., F.R.S., President, in the Chair.

ON URÆMIA. BY B. W. RICHARDSON, M.D.

Dr. Richardson commenced his paper by some remarks on the difficulty of forming a diagnosis between the effects of uræmic poison and that of ordinary narcotics. Both classes acted in a similar manner—by arresting the oxidation of the tissues; and further, in many cases of uræmic poisoning, an attempt at elimination from the mucous surface of the intestinal canal is made, and gastro-enteric mischief is set up, as occurs in poisoning by the so-called narcotico-irritants. Several illustrative cases which had fallen under his own observation were related by the author, in some of which the character of the symptoms had given rise to the suspicion of poisoning.

As to the *cause* of uræmic poisoning, it is certain that there is a narcotic poison in the blood; but whether this is urea or carbonate of ammonia, is difficult to decide. Dr. Richardson's experiments tended to the conclusion that it is an ammonia-compound; for, by injecting carbonate of ammonia into the blood in dogs, he had produced the symptoms of uræmia—which, however, were transitory, rapid elimination taking place so long as the kidneys remained free. Again, on suppressing in dogs the function of one or both kidneys, he had found ammonia in excess in the blood; and further, on arresting the play of one kidney in each of two dogs, and treating one also with carbonate of ammonia, death was here more rapidly produced than in the other. The same effect, however, may be produced by the injection of urea or of some narcotic into the blood of an animal, the function of whose kidney is suppressed. All that could be said was, that when the function of the kidneys is arrested by disease, there accumulates in the blood an ammonia-compound, of which, however, the absolute composition is not yet known.

Why does a small dose of atropine or of morphia produce typhoid narcotism? These poisons do not increase in the blood; but Dr. Richardson had found that they start in the blood an excess of ammonia; whether by producing paralysis of the secreting force of the kidney, or by a direct effect on the blood in the systemic capillaries, is yet to be ascertained.

The absolute *symptoms* of uræmia were thus described. There are almost invariably premonitory signs; consisting of an inordinate desire to sleep in almost any time and place; or of paralysis of sensation in extreme parts; or of transient mental confusion, with feebleness and listlessness, but without vertigo or oppression. There may also be vomiting, which is sometimes very severe; there may be also relaxation of the bowels, which gives relief if it be not too profuse and too continuous. There is almost always a peculiar sickening odour of the breath, much resembling that caused by sulphide of ammonium; the breath in these cases yields ammonia largely.

Persons having a tendency to uræmia suffer exceedingly from cold, feeling acutely the influence of a fall in the thermometer; and the symptoms often have their date from such a declination. They also suffer more than others from a hearty meal, especially if that consist largely of nitrogenous food. Dr. Richardson believed that in many cases the so-called apoplexy occurring after a meal, remaining for many hours, and ending either in death or in recovery, is of uræmic origin. Uræmic patients are also dangerously susceptible to the action of certain drugs. The smallest dose of mercury seems sufficient in them to arrest the anal secretion, and to excite uræmic symptoms; and Dr. Richardson had seen the same effects follow even an ordinary dose of opium. He believed that, in many cases where small doses of opium had been believed to destroy life from a peculiar idiosynerasy, there may have been a condition of kidney favourable to the development of an acute form of uræmia.

The acute symptoms of uræmia come on either with coma or paralysis, or both combined. They are usually sudden in their intensity, and are preceded by suppression of urine, or constipation, or a chill by which the eliminating functions are suppressed. There is often active convulsion, almost epileptiform in degree; but Dr. Richardson had seen death occur from uræmia without any such sign; he had even seen an animal die from artificial uræmia without convulsion, though this is not the rule. There occasionally will be squinting in the course of the acute paroxysm; but this is not the rule. The state of the pupil varies; it may be reduced to a pin's point, or it may be largely dilated; in either case, it is insensible to light. The countenance is dusky; the skin unimpressionable; the extremities cool or cold. If the coma is profound, there is blowing expiration; the pulse is slow and intermittent, or irregular in periods. By this Dr. Richardson meant that, counted over two spaces of time of equal duration, there is a difference in those two periods. We find the pulse during one minute at 60: we wait a minute, and take it again; and, although the relation of beat to beat seems the same, we find that, in the course of the second observation, five, ten, or even fifteen pulsations have been gained or lost. This form of irregularity of pulse is not peculiar to uræmia, but is common to it, and is inevitably a bad sign. It depends on a corresponding irregularity of the respiration; for, in all forms of slow narcotic poison, the heart is obedient to the respiration. The respiration is from the beginning to the end is irregular and imperfect; there is not dyspnœa, but uncertainty; not obstruction to air, but a destroyed balance. Frerichs pointed out first that the breath is ammoniacal in uræmia. Other observers have denied the position. Both are right, and both are wrong. In all persons there is an exhalation of ammonia by the breath, varying in amount. In uræmic persons, in their ordinary health, there is, Dr Richardson believed, always an excess of ammonia in the breath; for in them the lungs are supplementing the kidney. If, then, in any case there is sudden suppression of the excretory power of the kidney, there may be an excess—a large excess—of ammonia in the breath. The author had unmistakably seen examples where this excess was manifested so clearly that the exhaled vapour gave distinct fumes with the hydrochloric acid rod, and even changed the colour of reddened litmus. On the other hand, there are cases where the very cause of the development of the acute symptoms lies in the fact that the compensatory eliminative function of the lung has become suppressed; in such state, there will be no ammonia found in the breath; it would be a saving clause, if the alkali were there.

In regard to the *diagnosis*, Dr. Richardson commented on the degree of consciousness manifested by the patients in the extreme state of uræmia. There are periods when the coma is so profound that nothing rallies; but there are again other times when the patient rouses of himself, or is quite capable of being aroused, and of speaking or attempting to speak, and of sitting up, and of swallowing foods or medicine, and of acting altogether with a considerable amount of intelligence. This one sign is specially noteworthy, in that it is to a considerable extent a distinguishing mark, and the only distinguishing mark, between uræmic coma and the coma resultant from opium.

The blood in uræmia is usually dark on both sides, and but feebly coagulable. Nevertheless, there may be loose separations of fibrine in the heart, forming, as it would seem, at an early stage; but these are rare. The blood, after removal from

the body, remains fluid, but coagulates on addition of milk of lime with evolution of ammonia. The corpuscles undergo great modification. They are crenate at the edge, take an oval form, show no disposition to coalesce, and are, in my opinion, reduced in quantity. Towards the last stages of life, the arterial assumes the character of venous blood. The *finale* is by a slow and steadily progressive asphyxia. The blood fails in its pulmonic journey. Hence, in the *post mortem* examination of uræmia, we discover general congestion of the brain, and of the liver and other abdominal organs. There may even be exudation of serum; and these secondary results have been often taken for primary conditions.

In noticing the *cause of death* in uræmia, Dr. Richardson observed that, if ammonia or carbonate of ammonia is added to venous blood, its capacity for absorption of oxygen is arrested. In uræmia, there is induced a superalkalinity of blood, and the blood brought to the lungs is rendered incapable of active oxidation; this effect is more thoroughly brought out, until at length the process of respiration is stopped altogether, and asphyxia is the final result.

This explanation of death is applicable to many other diseases—to typhoid fever, to snake-bite disease, to cholera, and probably to yellow fever. It may be described as *asphyxia commencing in the blood;* it *is* asphyxia commencing in the blood. The patient may breathe freely; but his inspired air is not applied. Filling his lungs, it is virtually as though his lungs were occluded. Darkened, congested, comatose, senseless, jactitating, or convulsed, he dies by a slow deprivation of air. In uræmia, we have the perfection of this asphyxia: it admits of observation by synthesis on the lower animals; and it is worth the study, as explaining many new truths.

Treatment. In persons disposed to uræmic symptoms, an acute attack may often be long warded off by attendance to certain simple rules. The surface of the body must be kept clean, that it may excrete without impediment; and it must also be kept warm, that it be encouraged to excrete. Active exercise is essential; but it must be so tempered that sudden exposure from heat of surface to prolonged chilliness be not induced. The diet of the patient should include as little as possible of nitrogenous supplies, while alcoholic may be more liberally supplied in proportion. The essence all through of these preventive measures is to keep up free elimination by the lungs, skin, and bowels, without prostration.

To give calomel or other mercurial is to give poison; to administer opium as is often done when purging occurs, is to stop a natural process of cure, and to add another narcotic to to one already present in the body. In case of constipation, a gentle purgative of senna or rhubarb is useful. A small dose of these will usually act more freely than would be expected: the overaction is good.

When the uræmic symptoms are developed, what shall we do? In the earlier stages, when premonitory symptoms only are present, a diaphoresis, excited either by the bath or by a diaphoretic, will often ward off the attack. A purge will do the same. Dr. Richardson believed that the best purgative in these instances is scammony, with a full dose of tincture of colchicum. When the patient is unconscious and comatose, the means of producing a derivative action of the skin are not readily applied; for the action must be general, if it is to be useful. To blister is to lose time. A purgative is always good practice, but is often too slow—is often inactive altogether. Whenever, in acute uræmia, the patient is not excessively fat, nor poisoned with mercury, general blood-letting may be adopted rationally. Physiologically, this remedy offers itself; for there is a soluble poison in the circulating fluid, the which one may remove by the lancet in larger quantities and in shorter time than in any other way. By this process, also, congestion of internal organs is removed, and secretion bilerated. Practically, Dr. Richardson could bear evidence to the efficiency of this measure, having seen its influence in more than one example. That there should be no relapse after such treatment, is not against the treatment, seeing that the success of any measure will turn on the amount of lesion in the kidney and the degree of suppression. Hence when a dog, in whom the kidneys are extirpated, is bled, he cannot be expected to recover, because a new eliminating function cannot be established; but Dr. Richardson had found that, when an animal so circumstanced is bled, his appetite returns, his symptoms of coma are for a time removed, and he is maintained in life much longer than if left simply to his fate. In the case of a man in whom there was entire occlusion of the renal function from disease, the abstraction of blood could only play the same part; but granting that in another the occlusion was not perfect, then the removal of blood would give the opportunity, perhaps the only opportunity, for the restoration of function.

It might seem a reasonable method of treatment, it would be a reasonable method of treatment in uræmia, to introduce oxygen into the body. We could now do this without difficulty or risk; but the action of this agent could only be secondary as a remedy, since no element in treatment can be successful until the renal function be restored, and that recovery can only be proportionate to the restoration of such function.

Dr. Richardson concluded with some remarks on the importance of the subject of uræmic poisoning in regard to forensic investigations.

Dr. James Bird had seen many cases of the kind described by Dr. Richardson, and could bear testimony to the mode of treatment recommended, which he had employed successfully in India. The first thing which drew his attention to it was an observation of Sir Astley Cooper regarding a case of "ischuria renalis", in which blood-letting had been recommended by Dr. Maton.

Dr. Thudichum observed that, as to the pathology of uræmia, Frerichs had said that, in consequence of kidney-disease, urea is retained in the blood, and is changed into carbonate of ammonia. But Frerichs had not proved that urea is retained in the blood. There is, no doubt, an increased amount of ammonia in the breath; but is it derived from the blood? He (Dr. Thudichum) had carefully examined, some years ago, the blood from persons dying of uræmia. He had carefully collected the blood into absolute alcohol; and in one case he had found little more than thirteen grains of urea in a pound of the blood. In this case, he had analysed the urine for twenty-eight days; and the patient had discharged, on a daily average, a hundred and twenty-four grains of urea. He had come to the conclusion that, if any urea is retained, the quantity must be very slight. Does any of the urea in uræmia pass into the secretions? This is of importance, as the practice of many physicians must be guided by this. Dr. Golding Bird, he believed, had stated that he had found urea in the fæces; but Dr. Thudichum, while not contradicting this statement, had been utterly unable by analysis to procure urea from fæcal matter. Why is it necessary to assume that the uræmic state is caused by the retention of *urea?* There are many other substances in the urine besides urea, each of which may possibly produce the symptoms. The whole subject requires fresh investigation. As to the pathology of the symptoms, he believed that the most correct explanation of the state of the kidney had been given by Dr. George Johnson; that the uræmic symptoms mostly occur in cases of shrunken kidney with small intratubular casts, not covered with the epithelial lining of the uriniferous tubes.

Dr. Sibson agreed with Dr. Richardson as to the value of blood-letting in certain cases of uræmia. He thought that this fact of the utility of bleeding would go far to confirm the idea that there is not much urea in the blood. In ordinary narcotic poisoning, the use of the lancet is undoubtedly injurious. The blood-letting does not remove the poison; but it removes local congestion. Every narcotic poison produces some local congestion, each peculiar to itself. He would press on the attention of Dr. Richardson the importance, in uræmic poisoning, of the use of the horizontal hot-air bath. He had had lately several cases of scarlatina under his care, some with albuminuria; in some severe instances of which, he had used the hot-air bath with benefit; as he had also done in ordinary cases of acute albuminuria. He agreed with Dr. Richardson as to the use of blood-letting in cases of sudden uræmia without much previous depression, and with much congestion.

Dr. Salter thought that, if the patient in Dr. Thudichum's case had twenty-five pounds of blood, he must have had three hundred grains of urea in it. He did not think it necessary to show that there is a great amount of urea in the blood in uræmia, seeing that the quantity to be found in healthy blood is so small that it can scarcely be detected. Hence a very small quantity retained in the blood may produce very severe symptoms. Uræmic symptoms occurred in enlarged as well as in contracted kidney.

The President observed, that the simple presence of urea in the blood would not account for the symptoms of uræmic poisoning; since in some diseases, as in cholera, urea is retained in the blood in great excess.

Editor's Letter Box.

ACTION OF MERCURY ON THE LIVER.

LETTER FROM T. INMAN, M.D.

SIR,—The correspondence on this subject in the last number of the BRITISH MEDICAL JOURNAL is very significative, and I feel strongly tempted to comment upon the style of reasoning adopted. I forbear to do so, however; for my wish is simply to elicit the truth; and this does not necessarily go with apparently logical argument.

In any search after truth, facts alone, clearly stated and duly authenticated, should carry conviction against ingenious hypothesis. May I ask for a record of such facts?

First. Proof is required from Dr. Williams that the liver is better for taking a rest, under the influence of mercury, from secreting bile; and this it must be difficult to give, for Claude Bernard tells us that the liver rests every day in this fashion, as soon as food is taken into the stomach. (*Vide* his last lecture, *Med. Times and Gazette*, Oct. 20th, 1860.)

Secondly. Proof is required from Sir Henry Cooper that on any single occasion he has increased the secretion of the liver by the use of mercurials in any dose.

To narrow as far as possible the point at issue, I will allow that mercury *may* increase the secretions of the liver; just as I would grant, for the sake of argument, that an ostrich might fly, and that the dodo did. Sir H. Cooper says, mercury does increase the hepatic secretion; I say it does not. I have given the reasons for the faith that is in me. Will Sir H. Cooper give equally the grounds for his belief? Of course, "practical experience" and "well grounded convictions" alone cannot be received as cogent facts.

I am, etc., THOMAS INMAN.

Liverpool, November 3rd, 1860.

DR. JORDAN'S WORK ON SKIN-DISEASES.

LETTER FROM JOHN CHURCHILL, ESQ.

SIR,—You do me but justice when you state "that I could not have been aware of the company I was to be thrust into" when I assented to have my name appended to Dr. Jordan's book on *Skin-Diseases*. I had no ground to suspect that this book would have been advertised in a way so discreditable. I fear that I cannot compel the withdrawal of my name; but I have done all I can, viz., refuse to sell the book; and it no longer takes its place in my stock.

I had come to this determination, and had acted upon it, before your well merited censure appeared.

I am, etc., JOHN CHURCHILL.

11, New Burlington Street, London, W., October 23rd, 1860.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

Of sons, the wives of—

HOGG, Charles. M.D., Aldersgate Street, on November 2.

SEQUEIRA, H. L., Esq., Jewry Street, Aldgate, on November 3.

Of daughters, the wives of—

*ROUTH, C. H. F., M.D., Montagu Square, on November 4.

SUMMERS, J., M.D., Surgeon-Major, at Brompton, on Oct. 13.

MARRIAGES.

ARMSTRONG, Captain Thomas P. St. G., 49th Regiment, to Elizabeth M., second daughter of the late Robert GRAVES, M.D., of Cloghan Castle, King's County, on October 31.

METCALFE, R. Ives, M.D., Sutton St. Mary, to Sarah Anne, daughter of William ADAMS, Esq., of Wisbech, on Oct. 30.

WHYTE, John, Esq., East Grinstead, to Agnes K., youngest daughter of the late William ANDERSON, Esq., Dundee, at Greenwich, on November 1.

DEATHS.

BENWELL. On November 2nd, at Hove, aged 23, Charlotte M., youngest daughter of the late Henry Benwell, Esq., Surgeon, of Greenwich.

DRUMMOND, James, M.D., at Edinburgh, on October 13.

LOVE. On October 31st, aged 18, Frederick, son of John Love, Esq., Surgeon, 12, Lower Brook Street.

*MAULT, Samuel, M.D., late of Fenny Stratford, on board the ship *Antipodes*, off Pernambuco, aged 35, lately.

PRIDHAM, Edward P., Esq., Surgeon, at Taunton, aged 76, on October 30.

WILDEY, William W., M.D., Surgeon R.N., at Southsea, aged 38, on October 31.

APPOINTMENTS.

*METCALFE, J. A., M.D., elected Physician to the Dispensary Department of the Cheltenham General Hospital.

FORGERY OF A DIPLOMA. At the Dumfries Circuit Court, on the 28th Sept., before Lord Cowan, David Gibb, medical student, Glasgow, was charged with the crimes of "falsehood and forgery, in so far as, on or about Tuesday the 3d July, 1860, at or near Rosehall, in the parish of Dumfries, said David Gibb, being desirous of obtaining the appointment of assistant-surgeon to the Dumfries, Roxburgh, and Selkirkshire Militia, did wickedly and feloniously, at afore-mentioned place, write and fabricate, or cause to be written and fabricated, a simulated document purporting to be a diploma of competence from the Faculty of Physicians of Glasgow, and did utter and use such document, he well knowing it to be a forgery." The panel pleaded guilty of uttering and using such document. Mr. A. T. Boyle, prisoner's counsel, in extenuation, said that the panel, as a student in the Andersonian University, Glasgow, bore the most irreproachable character. Mr. Boyle produced certificates to that effect from Professors Bell, Morton, and Penny, of the Andersonian University, Glasgow, and from Dr. Watson of the Royal Infirmary there. Mr. Boyle said it had not been out of any sordid motives that his client had uttered this document. It was well known that the salary of an assistant-surgeon was a mere trifle, while the expense of equipment was considerable. It had been out of a desire—he might almost say a boyish desire, for at that time Mr. Gibb was scarcely twenty—to enter the ranks of such a regiment as the Dumfries Militia, that in an evil moment he had yielded to ill advisers, and uttered this document. He had made every reparation in his power by repaying the small sums he had received as salary while performing the duties of assistant-surgeon; and he (Mr. Boyle) hoped that his lordship would take as lenient a view of the matter as possible, in consideration of the youth of the panel and the misery he had endured since that unhappy occurrence. Lord Cowan said that it was one of the most painful cases he had ever met, that a young man of the education, character, and talents which the prisoner appeared to possess, should ever so far forget himself as to commit this breach of law. It was within his recollection when forgery was visited with the highest penalties of the Court. Luckily this case was not one such as the forgery of bank bills, but one which had been of little benefit to the panel. But, even looking at the present offence in its mildest form, he could not, sitting there to award impartial justice, visit it with a less penalty than twelve months' imprisonment, in order to show all that in this country no good could be attained by evil. He hoped that when the prisoner was restored to society this would prove a lesson to him. (*Dumfries Standard.*)

EPIDEMIOLOGICAL SOCIETY. At the opening meeting of the eleventh session of this society, held on Monday, the 5th inst., Dr. Babington, the President, delivered the introductory address, in which, after alluding to the loss which the society and the public had sustained in the death of Mr. Alexander, Director-General of the Army and Ordnance Medical Department, and of the lamented Dr. Addison, he proceeded to a general review of the principal epidemics that had prevailed in various parts of the world during the past year. Dr. McWilliam then read a paper by Professor Simpson of Edinburgh, entitled "Notices of the appearance of Syphilis in Scotland during the latter years of the Fifteenth Century." An abstract of this most interesting and learned paper will appear in an early number of the JOURNAL.

Experimental Physiology. The *Medical and Surgical Reporter* for October 12, apparently finds it necessary to argue in favour of teaching physiology by experiment rather than by mere lecturing and reading. In his remarks on the subject, the editor says: "The difference between teaching physiology didactically and experimentally, is just the difference between an engraving and the real form—between a photograph and the object itself. It is true, as modern art has succeeded in the stereoscope—a sort of artificial squinting apparatus—in presenting planes in relief, so, by straining our mental eye to the necessary obliquity, we may imagine that we behold *reality* when we are merely looking at its shadow. This will do well enough when the former cannot be obtained. A man may roam by aid of stereoscopic delusions in an hour's time through sceneries and countries that it would take him a year to travel through, and he will avoid being bored by dull waiters, the dangers of the sea, dusty rides, and other discomforts of a journey. But would any man call this travelling? It would be a strange fancy, indeed, if one should prefer reading a traveller's guide, however well written, to the journey itself, however tedious. If not in every department of human understanding, the principle of Locke, 'nil in intellectu, quod non prius fuerat in sensu', is certainly true in medical science, and one which, for the sake of successful medical teaching, should be hung up in letters of gold, conspicuous to the eye of both teacher and pupil. . . . But it might be, and it is often replied, that it is not necessary to demonstrate physiological facts, which have long ago been demonstrated as perfectly true. A single glance will show the fallacy of such a reply. Take, for instance, the glycogenic functions of the liver, the artificial production of diabetes, or of cataract; all facts which elucidate very important functions, and tend to explain many morbid conditions of the economy. Now, it is said by the opponents of experimental physiological teaching, that inasmuch as the glycogenic function of the liver, the artificial production of diabetes, and of cataract, are phenomena or facts perfectly well established, what is the use of encumbering our lectures with experiments to verify them? We would answer this question by asking, what is the use of showing in our chemical lectures, year after year, by actual experiment, that water is composed of oxygen and hydrogen, when these last seventy years the fact has been perfectly well established? . . . Why spend valuable days in demonstrating well established facts, which could be taught didactically in so many hours? It is, of course, unnecessary for us to answer these questions, which we have put merely to show the inconsistency of the plea against introducing experimental physiology into the regular curriculum. But, as really the only objection raised against is because of its encumbrance and waste of time, we shall devote a few words to this. There is nothing more certain than that, with the demonstration before his eye, the pupil is enabled to understand any truth or fact in half the time, at least, than if he were forced to draw off from the didactic teaching, part of his attention to supply the want of the former by his imagination. We had been reading, and we had been 'read to' about the reflex action of the nervous system, for days and weeks didactically; but we really never understood the subject thoroughly, until we witnessed a few simple experiments of Marshall Hall, and then we understood in *ten minutes*, what we had previously attempted to learn in vain. So it is with *all* departments of physiology—from digestion to secretion, from excretion to generation. Another point must be taken into consideration, and one of no little importance. If experimental physiology is made the rule of medical teaching, the student will be less encumbered with untenable and mere speculative theories, because the teacher will be careful not to state what he cannot satisfactorily demonstrate by experiment. It is unfortunately but too often the case that, in didactic teaching, generalisations take flight so fast that facts cannot follow, and fortunate the pupil who has mental ballast sufficient to keep him down to the latter. It must be claimed for experimental physiology, that it is the only true method of teaching that branch, as it should be preeminently *demonstrative;* and further, that it will save time to the student, because it will obviate long explanations, which at best can elucidate the subject but approximately; and lastly, that it will purify physiological teaching from much rubbish and trash, because the experimental teacher will not state as facts what cannot be proven by the demonstrations of science."

Statistics of Lunacy. In a letter published in the *Lancet*, Dr. Tuke has analysed the statistics of the English Lunatic Asylums. There are 31,957 persons legally certified as of unsound mind; it may, therefore, be calculated that of the adult population more than one in every three hundred is afflicted with mental derangement. The question as to their treatment is one of great public interest. From the returns in the Fourteenth Report of the Commissioners in Lunacy, it is demonstrated that private asylums, conducted by resident physicians, take the highest place as curative institutions, and that the rate of mortality in them is less than in any other asylum of the same description. The following results are taken from the tables given by Dr. Tuke, and show the comparative advantages of a hundred and fifty-one establishments devoted to the treatment of the insane:—

	Per cent. of cures.	Per cent. of deaths.
60 Private asylums with resident physicians -	30·6	4·3
30 Ditto without medical residents - -	36·	4·1
20 Ditto receiving paupers - - - -	34·	7·7
41 County and borough asylums - - -	34·	7·7

It is satisfactory to find that in some of the private asylums cures amount to more than 50 per cent. of the admissions. The importance of prompt medical treatment is shown by the recovery of nearly 80 per cent. of the cases admitted under medical care during the first three months of the malady. (*Globe*, November 2, 1860.)

An English Summer. In the summer quarter of this year—July, August, September—rain fell at Torquay on 50 days of the 92, on 59 at Little Bridy (Dorset), 52 at Clifton, 57 in London (St. John's Wood), 67 at Royston, 58 at Nottingham, 59 at Leeds. Fog prevailed on 41 days in the quarter; hail fell on 13 days. In some places the grass was left unmown till the middle of September. Wheat ripened very irregularly; at a few places it was cut on the 6th of August—some was uncut at the end of September; last year it was cut, even in the north, in July. Oats were cut at the latter end of August in the south; in the north a great deal of the crop was still uncut at the beginning of October. Apples did not ripen until the middle of September as far south as Nottingham. The temperature reached 80° in but few places; at the Royal Observatory it only attained 75°; at York only 73·5°; at Ventnor only 70°.

Cure for Intermittents. Much laughter has been expended on the benighted savage, who, in default of the medicine which is to cure his malady, makes a pill of his prescription, boldly gulps it down with the assistance of a draught of water, and wraps himself in his mat, sublimely confident of the result. The nuns of Carignano are at this moment, according to the statement of a contemporary, distributing an infallible specific for intermittent fever. The specific consists of a certain number of paper tickets of a yellowish tint, each being provided with the following prescription:—

"In conceptione tuâ, Virgo, immaculata fuisti,
Ora pro nobis Patrem, cujus Filium peperisti."

Each packet is accompanied with the "Directions for use", which run as follows:—"Place one of the papers in a spoonful of holy water, say a *Pater* and an *Ave Maria;* then swallow both water and paper, with a dose of good faith." The cure must be repeated for nine consecutive days. If you get well, so much the better for you, and for the nuns of Carignano. If the fever obstinately resist the charm, so much the worse; you neglected the invisible but essential dose of faith, and are, in fact, a hardened reprobate, on whom a miracle would be thrown away. (*Standard.*)

HEALTH OF LONDON—NOVEMBER 3rd, 1860.

[From the Registrar-General's Report.]

	Births.	Deaths.
During week ..... {Boys.. 956 / Girls.. 912}	1868	1049
Average of corresponding weeks 1850-9	1617	1179

Among the causes of death were—bronchitis, 97; pneumonia, 87; phthisis, 132; small-pox, 3; scarlatina, 47; measles, 44; diphtheria, 13; hooping-cough, 34. The deaths from pulmonary diseases (exclusive of phthisis) were 209, being 18 above the corrected average.

Barometer:
Highest (Tu.) 30·060; lowest (Th.) 29·916; mean 29·977.

Thermometer:
In sun—highest (Sun.) 110·0 degs.; lowest (Wed.) 63·0 degs.
In shade—highest (Sun.) 68·5 degs.; lowest (Sat.) 28·5 degs.
Mean—48·7 degrees; difference from mean of 43 yrs. +2·2 degrees.
Range—during week, 40·0 degrees; mean daily, 17·0 degrees.
Mean humidity of air (*saturation* = 100), 90.
Mean direction of wind, S.E and N.E.—Rain in inches, 0·00.

TO CORRESPONDENTS.

Communications have been received from:—Mr. J. A. Metcalfe; Dr. Wollaston; Mr. J. Grantham; Dr. Inman; Dr. Routh; Dr. T. Skinner; Mr. A. Prichard; Dr. W. Roberts; Dr. James Russell; Mr. R. S. Fowler; and Mr. J. V. Solomon.

NOTICE OF REMOVAL.

W. LADD, MANUFACTURER OF MICROSCOPES, IMPROVED INDUCTION COILS, AND PHILOSOPHICAL INSTRUMENTS of every description, begs to inform the Scientific Public that he has removed to more extensive premises, situated at

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Ordinary to Her Majesty, respectfully invite attention to their PICKLES, Sauces, Tart Fruits, and other table delicacies, the whole of which are prepared with the most scrupulous attention to wholesomeness and purity. The practice of colouring pickles and tart fruits by artificial means has been discontinued, and the whole of their manufactures are so prepared that they are not allowed to come in contact with any deleterious ingredient. A few of the articles most highly recommended are, Pickles and Tart Fruits of every description, Royal Table Sauce, Essence of Shrimps, Soho Sauce, Essence of Anchovies, Jams, Jellies, Orange Marmalade, Anchovy and Bloater Pastes, Strasbourg and other Potted Meats, and Calf's-foot Jellies of various kinds for table use. C. and B. are also sole Agents for M. Soyer's Sauces. Relish, and Aromatic Mustard; and for Carstairs' Sir Robert Peel's Sauce, and Payne's Royal Osborne Sauce. The above may be obtained of most respectable Sauce Vendors throughout the United Kingdom; and Wholesale of

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PULVIS JACOBI VER, NEWBERY'S.

GENTLEMEN,—We beg to call your attention to the following paragraph by "*J. Cheyne, M.D, Physician to the Hardwicke Fever Hospital, Dublin, in his paper on the virtues of James' Powder in the Apoplectic Diathesis*:"—

"She began a course of James' Powder in the latter end of September: the first night she took only two grains, and every succeeding night an additional half grain, till the dose amounted to twenty grains. She took *twenty grains every night for five weeks*, when she found herself so well that she discontinued the medicine."—"*Dublin Hospital Reports*," *vol.* I. *p.* 319.

To secure the dispensing of the *original* preparation, which, for 114 years, has been sold by the Newbery family in St. Paul's Churchyard, it is necessary to prescribe it as "*Pulvis Jacobi Ver, Newbery's*," otherwise another article (wanting in the best properties, and recommended to be given in a different code of dose, *though called by the same name*), will be substituted for the original medicine. This, of course, cannot but have an effect other than that expected, and will thereby lead the practitioner totally to discard it from his daily Pharmacopœia, as a preparation whereon no dependance can be placed. We hope the above extract will prove that when the genuine medicine is used, faith may be reposed in it.—Yours faithfully,

F. NEWBERY & SONS.

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The *British Medical Journal.*
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It is suited to all cases of delicate skin (whether arising from disease or otherwise), and is admirably adapted for nursery use. May be had of all respectable Chemists, Perfumers, etc.

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Strongly recommended by the Faculty in all cases of Debility, Indigestion, Consumption, and all Pulmonary and Chest Diseases.

The two articles here combined are well known for their nutritive qualities. The Moss contains a large portion of nitrogen, or flesh-producing substance: and being prepared by a very careful and peculiar process, which frees it from all the grittiness and disagreeable flavour which are always so unpleasant, is rendered perfectly pure, with nothing but the beneficial parts left.

The Cocoa, containing more nutriment than most articles of food, being combined with the Moss, forms in this mixture an article of the greatest importance to the Invalid, and at the same time beneficial to the healthy and robust, restoring health where it is declining, and retaining it where already enjoyed.

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"The combination of Iceland Moss and Cocoa forms a valuable article of diet, suited equally for the robust and for invalids, especially those whose digestion is impaired. It is very nutritious, of easy digestibility, and it possesses, moreover, tonic properties." (Signed) A. H. HASSALL, M.D.

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